ATHLETIC JOURNAL

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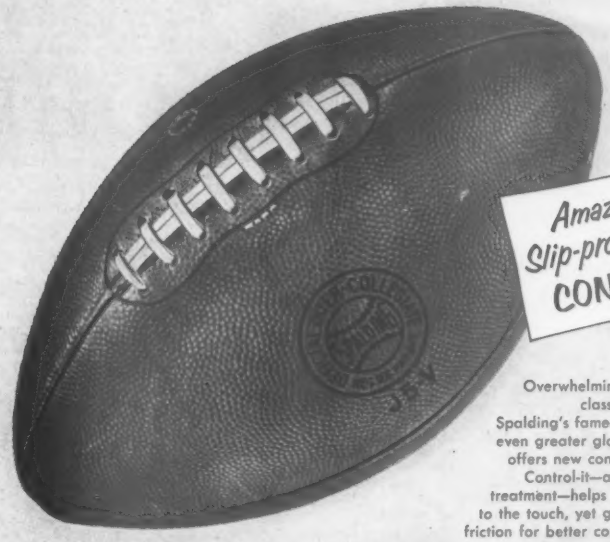

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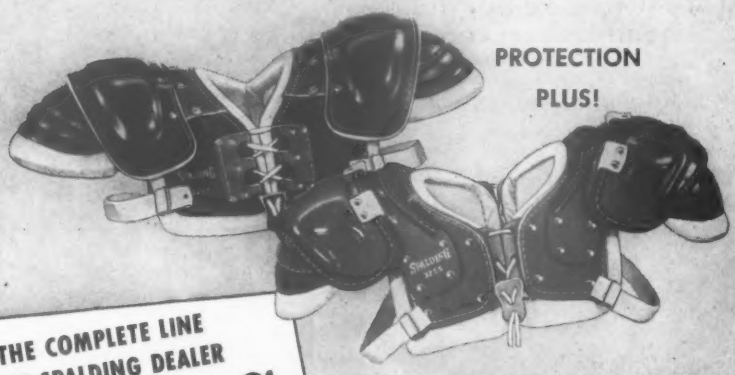

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FRONT COVER ILLUSTRATION

Track and field **events are** measured in two ways, either by a tape measure or a **stop watch.** Efforts to photograph an extended tape measure proved **unsuccessful.** However, representing the tape measure side of track and field are J. Lewis Hall of Florida and Sim Iness of Southern California. The stop watch representatives are John Posten, former Florida State University captain and sprinter, and Wes Santee, America's foremost miler.

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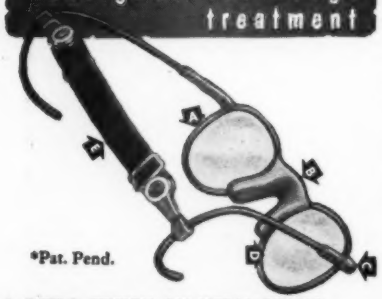

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from here and there

ONE of the veterans of high school athletics is Paul Marschalk of Huron, South Dakota. He has been in coaching since 1924 except for a few years when he went into the oil business. He coached at Pierre, S. Dak., High School, Shattuck Military Academy, and Hawarden, Iowa before going to Huron last year. Huron has a million dollar arena which is part of the school facilities . . . Illinois University has one of the best all-around athletic programs of any school in the country. During the past four years her teams, competing in eleven sports, have won or shared 22 out of a possible 55 Big Ten Championships . . . We are indebted to Richard Seltz, baseball coach at Austin, Minnesota, High School, for this very weird triple play. "During the semi-finals of the Minnesota state tournament, Austin was leading Eveleth 8-0 in the last half of the seventh inning. Eveleth had men on first and second with nobody out. The next man up hit a fly to deep left field; the Austin left fielder went back and made the catch for the first out. The man on second proceeded to third and slid in safely under the tag. The runner on first hesitated but tried for second and was thrown out, third to second for the second out. The players on the Austin bench called for their teammates to tag second which they did and the umpire called the runner on third out for leaving before the catch was made, thus completing the triple play." . . . The basketball "Coaching 400" has nine members and is comprised of coaches who have won over 400 victories. "Phog" Allen is way out in front with 735 victories. The other honored coaches with the number of victories are: Ed Diddle (571); Hank Iba (539); Fred Enke (489); Adolph Rupp (479); Jack Friel (454); Nibs Price (440); Joe Hutton (422); and Slats Gill (417) . . . This summer marks the twentieth anniversary of the Texas High School Coaches Association Coaching School, by far the largest school of its kind in the nation. The school will return to Dallas where the first coaching school was held. In keeping with the occasion, efforts are being made to have as many members of the all-star teams through these past twenty years as possible return for a reunion. The school will feature Bobby Dodd, Jess Neely, and "Red" Sanders as instructors.

• • •

REMEMBER when the popular concept of a football player was a big dumb individual? The scholastic achievements of the modern-day player have gone a long way toward changing the old belief. As an illustration, exclusive of those on this year's squad at Notre Dame, there have been 97 letter winners since the war. Of that number 94 have received degrees. One player transferred to another school and one dropped out of school due to death in the family . . . Two of the most evenly matched conferences are the Big Seven and the Southwest. Since the war, representatives of the two conferences have met 37 times with a slight edge in favor of the Southwest Conference. Actually, the results are 19 wins for the Texans against 16 losses and two ties. Four schools from each conference have been involved in the 37 games . . . In the past Montana and Montana State have played 51 times. Including five tie games, there have been only 22 games in which both teams have scored . . . In 1946 New York had 698 member schools, one less than presently. In Minnesota there is one more member school than in 1946 which indicates that new schools being built in growing population centers are making up for the number of schools being lost through consolidation . . . Since 1925, when Grantland Rice started selecting his All-American teams, only two players have been chosen for three years and these were Chris Cagle of Army and Bennie Oosterbaan of Michigan. Other head coaches of today who have been chosen are Bennie Friedman, Wes Fesler, Bobby Dodd, "Biggie" Munn, George Sauer, George Barclay, Bowden Wyatt, and Bernie Crimmins . . . "Ears" Whitworth, Oklahoma A. & M. coach, attempted one field goal in his career at Alabama and it was successful. The successful kick was against Washington

(Continued on page 50)

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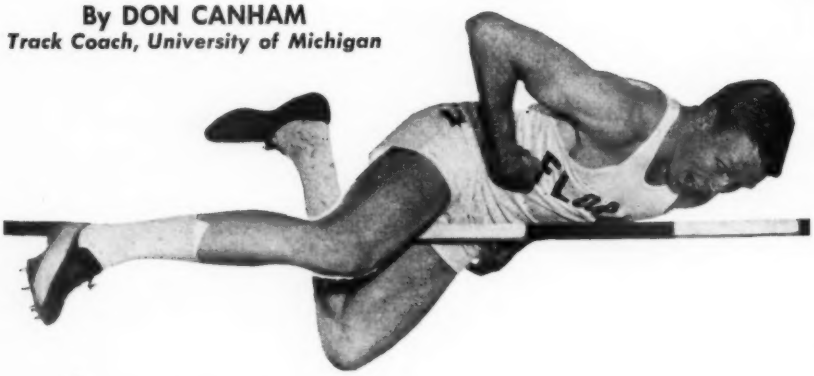
J. LEWIS HALL

Illustration 1 shows how J. Lewis Hall has used his approach to build momentum. Notice his long stride, erect trunk, and obvious relaxation. Hall is dropping down into a crouch as he gets ready to gather for the take-off. His ability to drop low over his take-off foot partially explains his explosive take-off (Illustration 2). The long last stride has caused Hall's body to lean back, and with the checking action of his foot plant will aid in converting forward momentum into upward momentum. Notice the heel first foot plant (Illustration 3). Hall, like all straddle jumpers, shows a premature turning toward the bar. His right leg is starting to kick along the bar. This kick will help pull him up over his take-off foot (Illustration 4). Illustration 5 shows co-ordination between Hall's free leg swing and the violent extension of his take-off leg. The pendulum action of Hall's kick will help pull his body weight up over his take-off foot.

Trends in the High Jump

Part One—Straddle Styles

By DON CANHAM
Track Coach, University of Michigan



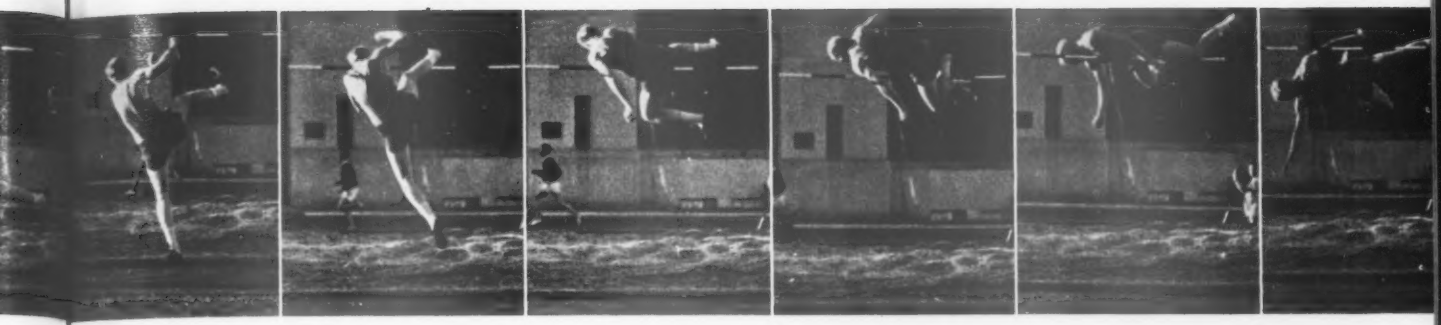
WHEN the remarkable Mike Sweeney established his world mark of 6 feet, 5⅝ inches in 1895, using the Eastern style, which was new at the time, the athletic world began to realize the part that form was to play in the further advancement of high jumping sights.

George Horine, Harold Osborn, Walter Marty, Corny Johnson, Dave Albritton, and Les Steers, to name just a few, further impressed coaches and competitors with the fact that

ERNIE SHELTON

The accompanying pictures of Hall and Shelton were taken at the 1953 NCAA Meet in Lincoln, Nebraska and show both jumpers clearing 6' 7 1/8" in actual competition.

Shelton uses less power and speed in his approach than Hall does. Thus, his last stride is shorter. His take-off foot is being planted at right angles to the bar, heel first (Illustration 1). Illustration 2 shows Shelton turning in and leaning to the left. This is a tendency common to all straddle jumpers. It tends to limit the efficiency of the take-off, and must be compensated for by a parallel kick and a right angle foot plant. Hunching his left shoulder and kicking along the bar, rather than in line with the run, helps pull Shelton's center of gravity up over his take-off foot (Illustration 3). Even though his body is turned prematurely toward the bar and his head is starting forward to lead the jump, Shelton is showing a relatively good vertical take-off (Illustration 4). Shelton's head and shoulders are not being driven as high as Hall's. He is bringing his upper trunk forward to start his body into a dive (Illustration 5).



Notice how the hunch of Hall's left shoulder and the kick along the bar are pulling his body up over his take-off foot. His take-off foot has been clearly planted at right angles to the bar (Illustration 6). Illustration 7 shows the final stage of a very fine take-off. Hall, with a wonderful lead leg, shows a vertical take-off even though he is turned toward the bar. Notice how high Hall has driven his head and chest above the bar. Thus, the center of gravity is very high. His left leg is still being drawn up (Illustration 8). Illustration 9 shows Hall's head starting to turn back toward the runway. This turning will help rotate his body around the bar and materially aid in left leg clearance. Hall's left leg is frog kicking and the toes of his left foot are turned up, lifting his trail leg clear of the bar. His head continues to turn, helping the right side of his body drop and lifting his left side (Illustration 10). Illustration 11 shows Hall's head completely rotated, and he is looking back at his take-off area. His trail leg has been straightened and lifted clear of the bar by a well-executed turn-up of his left foot.

technique must constantly change and improve. They also demonstrated beyond doubt that crossbar clearance could not be standardized or stereotyped into one sure form. Each one of these high jumpers used a form which had similar fundamentals, but in technical phases often varied considerably.

As we all know, in actual practice, jumping form has moved from the scissors style to the Eastern, then to the Western and straddle. Today, at our jumping pits we almost never see anything but the Western and straddle styles (and their variations) used.

It is evident, however, that the simple division of styles into either Western or straddle is not entirely adequate. While Walter Davis and Walter Marty both used what we generally regard as the Western roll, a comparative study of movies of these men side by side quickly shows that they used distinctly different techniques. To say that Gil Cruter and Les Steers both jumped straddle because each man cleared the bar on his stomach, is even farther from the truth. They not only had different points of view, but vastly different fundamentals upon which they based their jumping technique.

For several years, here at the University of Michigan, we have believed in and carried this division of styles beyond the straight Western and straight straddle. It has been our feeling that understanding the fundamental variations which Western jumpers employ often leads coaches and athletes to capitalize on qualities that certain jumpers may possess. Of course, the same thing holds true for straddle jumpers.

To aid us in understanding and teaching, we have broken the Western roll down into two basic styles and, in addition, have also found that the straddle style jumpers actually fall into two clear cut categories. Movies of most of the world's great jumpers since 1939 have confirmed our opinions, and the present crop of athletes

(Continued on page 44)

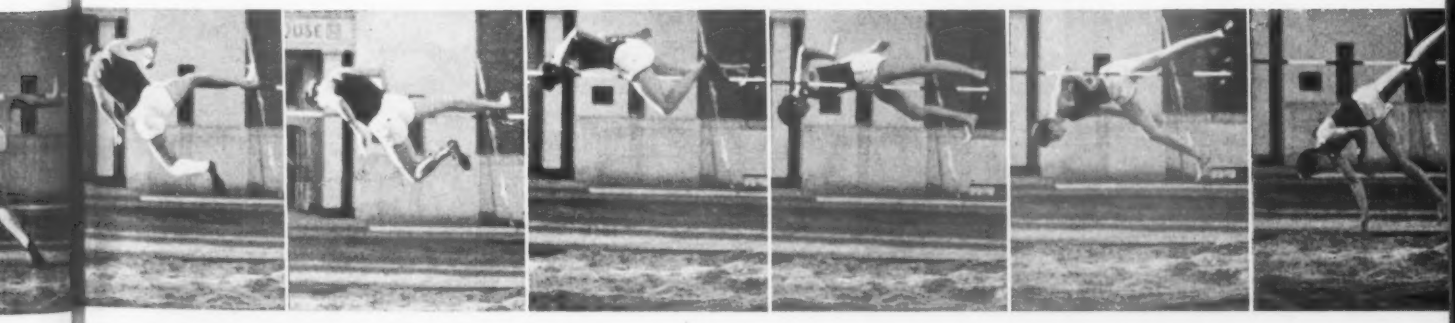


Illustration 6 shows Shelton's head ready to start down, even though his hips have not reached their maximum height. This is the start of the actual dive. Notice the fine use of his lead leg. The pendulum action of Shelton's kicking leg is still pulling his hips up, even though his head and shoulders continue to rotate downward (Illustration 7). Notice how Shelton carries his left arm to the side. Not letting his arm get between the bar and his body allows for very close clearance (Illustration 8). Illustration 9 shows Shelton's body in an inverted U position. His head and shoulders are below the level of his hips and trailing leg. Notice the extreme dive with Shelton's head and shoulders now well below his left hip and leg (Illustration 10). Shelton has completed the dive (Illustration 11). The toes of his left foot have been turned up quickly to aid in raising his left leg clear of the bar.

DON CANHAM competed as a jumper at Michigan and was NCAA champion in 1940. Since he became head coach at Michigan, five years ago, he has had four jumpers do better than 6'5" and seven jumpers do better than 6'4". One of his jumpers did 6' 8 ¼". At the National Track Coaches Association Clinic last month, Canham was a member of the high jump clinic. He has authored three books on track and cross country which have been published by A. S. Barnes.

These photos were taken of the actual record-breaking throw and are believed to be the only such pictures in existence.

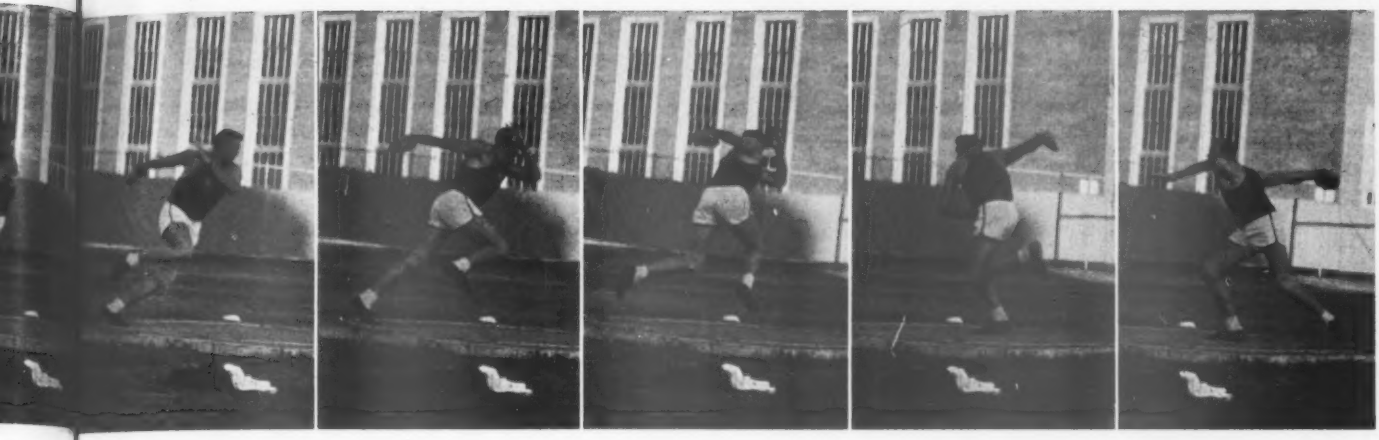
By JESS MORTENSEN
Track Coach, University of Southern California

First 190 Foot

AN analysis of the discus throw by Sim Iness should be preceded by a few comments on his physical attributes. Sim is 6 feet, 6 inches tall and weighs 250 pounds. He carries most of his weight through his chest and shoulders and has exceptionally long arms. His hips and legs are rather small for such a heavy man. Iness has been bothered throughout his college career by a trick knee which was injured in high school football. There is no question in our minds that if he had been able to do more running and develop stronger legs he would have thrown the discus 200 feet this past season. Also, Iness suffered a bad strain in his already weak knee just six weeks prior to the NCAA Meet in Lincoln. Just ten days prior to the NCAA Meet he was hit in the mouth with a discus. Three of his teeth were knocked out and four more were broken. Sim was forced to take sedatives continually up to the time of the meet. He certainly showed a great desire to succeed and a tremendous competitive spirit to set a new world record of 190 feet, 7/8 inches in spite of the obstacles he had to overcome. Setting a new world record on his last throw provided a dramatic climax to his collegiate career.

Illustration 1 shows Iness just before he starts the first part of the turn. Because of his leg length and also to give an additional quarter turn he has placed his left foot within three inches of the circle. He has forced his right arm back just as far as possible and placed most of his weight on his right foot.

He has started to settle down, bending his knees in order to get low enough to get a good leg lift. Notice



Throw

also that he has kept his right arm well back and his left arm cocked across his chest. He will maintain this position until the actual throw begins (Illustration 2).

Illustration 3 shows Sim beginning to shift his weight to his left leg. Notice his knees are still flexed.

Illustrations 4 and 5 show Iness pushing off with his right leg and shifting his weight over his left leg. His arms are still cocked well back of his body.

Illustrations 6, 7, and 8 show how Sim achieved such tremendous speed and drive across the ring. He reminds one of a sprinter coming off his marks. Iness has thrown his right leg around his left with his knee well bent. He is pushing off with his left leg, using a tremendous thrust so that in Illustration 9 both of his feet are off the ground. It is well to notice again that he still has both of his arms cocked well back to give him a long pull.

Illustration 9 shows Sim landing on his right foot and about ready to start the pull.

In Illustration 10 his left foot is on the ground just slightly to the left of the line of flight of the discus. This position of his left foot gives him an open stance and prevents locking of his hips. He is now starting the long pull. His left arm is starting to pull and his hips are starting to turn in advance of his right arm.

Illustration 11 shows Iness' actual throwing position. His left leg is almost straight and his right leg is well bent, with the weight over his right leg. Notice again how far back his right arm is held.

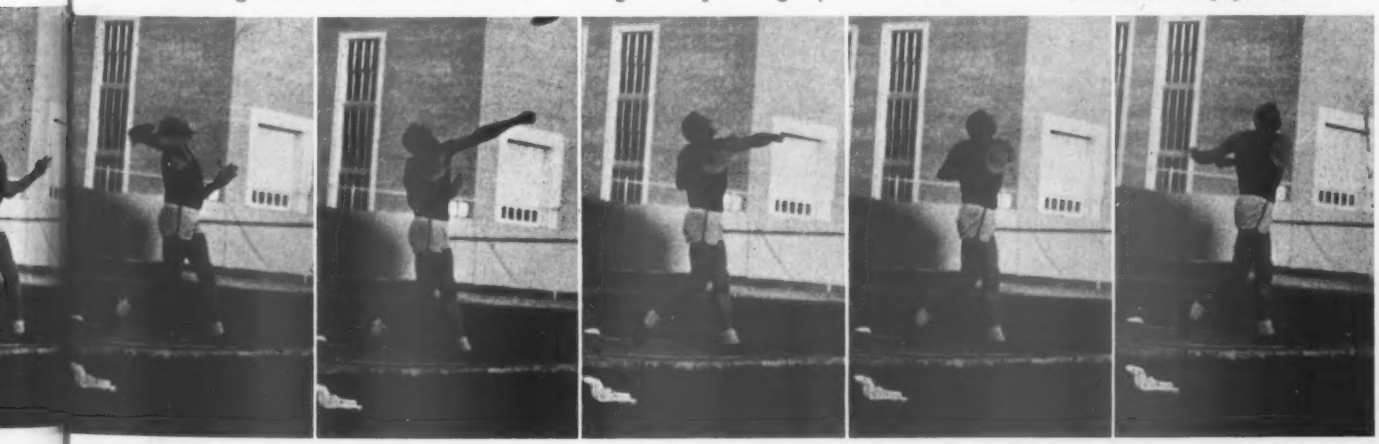
Illustration 12 shows Sim's right leg starting to extend for the push-off and his left arm is being thrown to the left. His chest has started to be thrust out and his head is thrown up and to the left.

Illustrations 13 and 14 show the push off his right leg with his hips starting the turn. Notice that the discus has dropped only very little below the level of his hips. Also, Iness' chest is thrown well out and kept in front of his trailing right arm.

Illustrations 15 and 16 show Sim just before the release. It appears that he has released the discus just a fraction too soon to complete the full turn. As we remember, the throw

(Continued on page 60)

JESS MORTENSEN earned eight letters in football, basketball, and track at U.S.C. from 1927 to 1930. After graduation he coached these three sports for 12 years at Riverside Junior College. After serving in the navy athletic program, Mortensen returned to Riverside for two years. During 1947 and 1948 he was head track and freshman football coach at Denver University. In 1949 he was head track coach at West Point, and when Jess Hill was made football coach at U.S.C., Jess Mortensen was selected his successor as track coach.



Santee's Stride

By M. E. EASTON
Track Coach, University of Kansas

A great deal has been said about the *Galloping Antelope* from Ashland, Kansas who came to the University of Kansas and made quite a name for himself in any distance from the quarter-mile up to and including the 5000 meters and cross country races.

Wes Santee's so-called short stride has been discussed by coaches, spectators, and competitors. Everyone seems to believe that he would do much

(Continued on page 55)

Illustrations

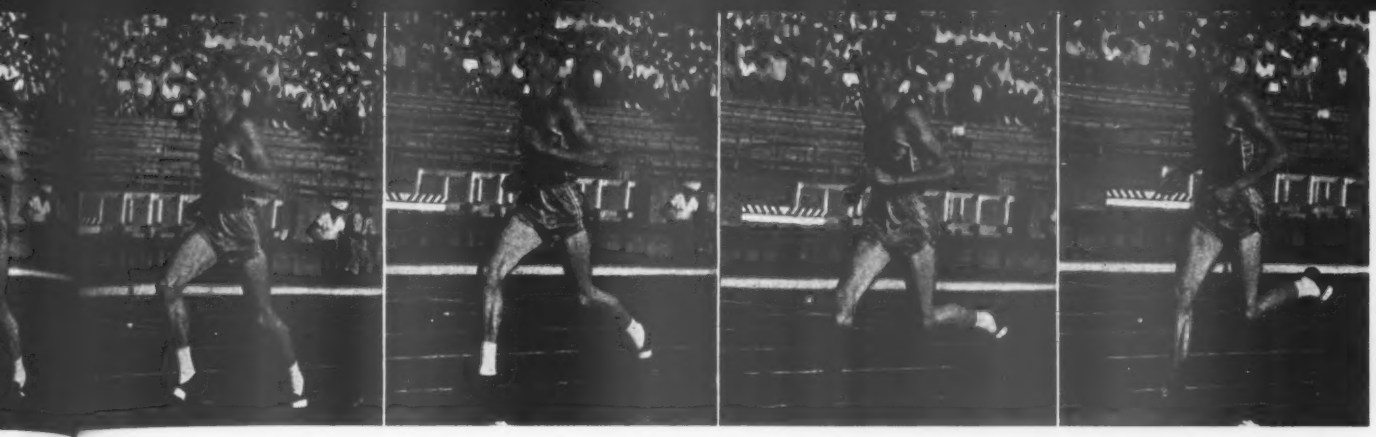
THESE pictures were taken at the NCAA Meet in Lincoln, Nebraska, June 1953. The sequence shows Wes Santee going into the third lap of his record-breaking NCAA mile run in 4:03.7.

Illustration 1 shows Santee at that particular relaxed moment in his stride, with his left foot flat on the ground and his left knee still slightly bent. His right leg is bent fully at the knee, coming to the high point with the heel kick. His arms and shoulders are completely relaxed. It will be noticed Santee has just a slight lean from his hips forward.

The extension of Santee's left leg and his right heel coming up to its maximum position are shown in **Illustration 2.** The arm action is approximately the same.

In **Illustration 3,** Wes' right knee is coming through rapidly, with his knee reaching and his heel coming off the ground. His leg is extended, starting the drive forward. Notice the arm action. His left arm never goes back to the rear too far and his right arm moves through in its regular arc.

Illustration 4 shows the further extension of his left leg coming high on his toe with the full drive of



power, and his right knee coming forward in its regular motion. The arm action continues in the same arc.

Illustration 5, shows the completion of this forward motion with Santee's right knee extended as far as it will be going with just a slight extension of his foot, and his left leg fully extended on the toe. The arm action has moved through in its regular arc.

Illustration 6 shows Wes' body completely in the air, still giving the full details of the relaxed running position of his entire body. This illustration shows his left foot just leaving the ground for the back kick and his right foot just ready to strike the ground, with his toe slightly extended in preparation for a new drive. The arm action follows the regular pattern.

Santee's arms are almost together as the ball of his right foot is just ready to strike the ground and his left leg is going into the back kick (**Illustration 7**).

The same action is shown in **Illustration 8** as is shown in **Illustration 1.** A somewhat more accentuated lean of Santee's body just at this moment, with his arms directly across from each other, is shown.

Illustration 9 shows that moment of relaxation when Santee's right heel strikes the ground slightly, and his left heel is at its highest point in the back kick.

An excellent view of the position just before the drive into the next stride is shown in **Illustration 10.** Wes' shoulders, arms, and chest are high and open for good breathing, while his hands and arms show complete relaxation in preparation for the drive.

In **Illustration 11** we see Santee at his best with a slight lean forward and showing a strong drive off the ball of his right foot. His heel is just coming off the ground. His left knee is extended and his left foot is coming through for the next step. This illustration shows the perfectly co-ordinated drive of Santee.

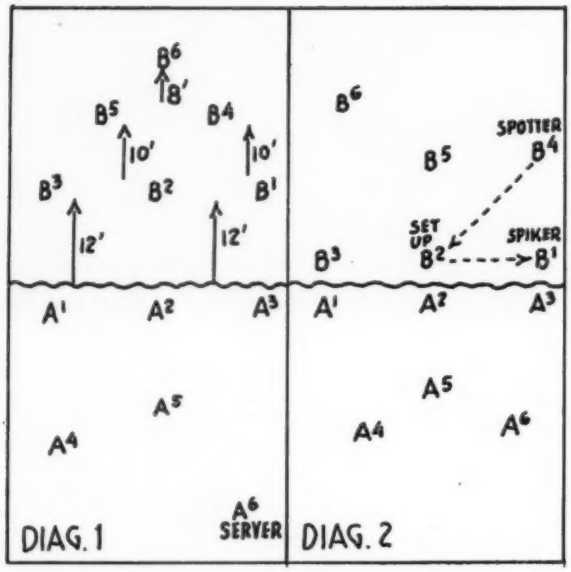
Illustration 12 shows the follow-through on this drive with Santee's right leg fully extended and his left knee coming up for that drive of his left foot which is coming forward. In each of these pictures the relaxed position of Wes' hips and the perfect body angle from his hips upward will be noticed.

Illustration 13 again shows Wes' body in the air, but is a better view of the finished drive of his right foot as it comes off the ground. His left knee is going forward and the ball of his left foot is extended to contact the ground for this drive.

In **Illustration 14** we see Santee in full stride off the ground, with that easy relaxed arm and shoulder motion, in a position to move into high speed. Wes has perfect co-ordination between his legs and arms. He is very strong in his shoulder girdle and this strength shows in his strong arm action.

Illustration 15 shows Santee's left foot coming in contact with the ground and his left shoulder back slightly, with his left arm swing completed to the rear. His right shoulder is slightly forward and his right arm is well relaxed.

In **Illustration 16** we again see Santee's left foot in contact with the ground and his right knee coming forward. Notice in each of these pictures that the heel of his back foot never comes more than just above the knee position. Then he pulls it through rapidly and sets it down quickly. He follows with a heel and toe motion combined with a tremendous drive off the driving leg and foot plus a strong arm action. Santee has implicit confidence in his own ability and hence is relaxed in his races.



By LESTER S. FEIN

Recreation Director, Avon Avenue School, Newark, New Jersey

Everyone Can Play Volleyball

ALTHOUGH volleyball holds a minor position in the field of sports, it has proven itself capable of awakening major interest among lovers of athletic competition. Combining fast action with highly-developed skills, volleyball is becoming an increasingly popular sport. Everyone can play volleyball for the sport is adaptable to practically all age levels. Skill and youth are not requisites for playing the game; anyone can bat the ball over the net. Naturally, interest and pleasure in the game increase as a player improves in the techniques.

Frank G. Menke's, *Encyclopedia of Sports,* lists a number of interesting items concerning volleyball. In 1895, about four years after basketball was originated by Dr. James A. Naismith, Physical Director at the Y.M.C.A. in Springfield, Mass., William G. Morgan, Physical Director at the Y.M.C.A. in Holyoke, Mass., gave volleyball to the world. The first equipment used consisted of a tennis net and a rubber bladder taken from a basketball.

While basketball became increasingly popular throughout the world, mainly because the speed of the game appealed to youth, volleyball found its adherents among the older people and suffered by comparison. However, when volleyball was set up outdoors it reached greater heights of popularity, for then it became part of the playground and recreation center programs. Boys and girls, as well as the older people, gathered to play the game, and soon it became apparent that volleyball could be made as fast a game as the players wanted it to be. Its very adaptability became one of its strongest appeals.

Recognition came nationally when the United States Volleyball Association took over its supervision. In 1922 the Y.M.C.A. took cognizance of the game and arranged a national championship in Brooklyn, New York. The first national championship under the sponsorship of the Amateur Athletic Union came in 1927. During these later years, volleyball began to receive some recognition in Western Europe, Mexico, and Canada. In 1943, a report of the National Recreation Association showed that 619 cities had organized competition and play. In addition, thousands of volleyball courts were being used at hotels, resorts, beaches, schools, picnic centers, parks, etc. The same year found 4,000,000 people playing volleyball and the game is steadily gaining more participants and enthusiastic supporters. Volleyball enjoys its greatest popularity in the Middle West and in smaller cities throughout the country.

Each year the Herbert Lee Pratt International Trophy is awarded to the nation's champion. The United States has had some great teams. The first of these can be traced to 1922 which was the first year of real competition. During the years from 1922 to 1927, Pittsburgh Central Y.M.C.A. reigned supreme. Pittsburgh could not be defeated and won the championship each of those years. In 1933 another great team appeared on the national horizon. This team, the Houston, Texas, "Y," held the title from 1933 to 1936, and won it again in 1938 to 1939. When the Los Angeles Athletic Club became the champions, in 1940, the West Coast received its first championship.

In New York state minor sports tournaments have been held for the high schools. These tournaments provide competition in three sports; volleyball, table tennis, and bowling. With a tournament as the final goal, schools became volleyball conscious.

Tournaments and interschool competition are wonderful incentives for the promotion of volleyball and other minor sports in high schools all over the country. In preparing for such tournaments, high schools conduct leagues in which almost 100 per cent of the boys participate. Thus, not only are skillful players and teams the result, but boys who are generally left out of the major sports find they fit into the pattern of volleyball more easily and more successfully.

In a tournament that is to be run off in a single day some modifications of the rules may be necessary in order to facilitate matters. Instead of

LESTER FEIN is currently a recreation director in the Newark, New Jersey, school system and, in addition, teaches at Fairleigh Dickinson College in Rutherford, New Jersey. Formerly, he was director of physical education at Fallsburgh, New York, High School, and while there led his teams to five consecutive volleyball championships in the New York Minor Sports Tournament.

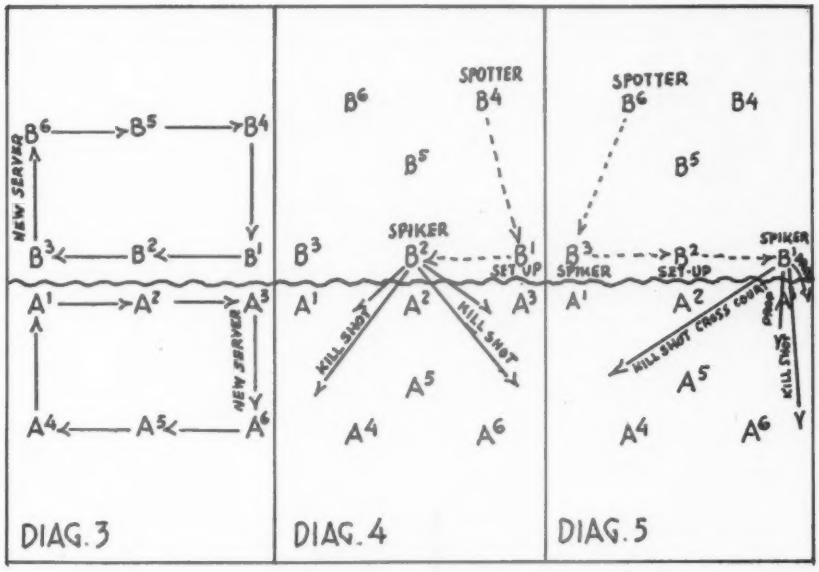
playing the regulation 15 point game, a time limit is set up. Thus, valuable time that is lost by long see-saw type games will be prevented. Twelve minute halves are stipulated and the team that has the most points at the end of the second half is the winner. There is a time out between halves of five minutes and each team is allowed one time out during each half. In the event of a tie at the end of the game, an additional period of six minutes is played. Should it be necessary, another six minute period can be added although it is rarely necessary to extend the game beyond one extra period.

The rules of volleyball are simple and, generally speaking, all players can become acquainted with them quite easily. Here are some of the particulars of the game and the major considerations with regard to rules.

In volleyball there are six players on a team—left forward, center forward, and right forward; left back, center back, and right back. The court is 60 by 30 feet and the net is three feet wide, and 32 feet long. At the center of the net, the top is eight feet from the ground. The ball is about 26 to 27 inches in circumference, weighs eight to ten ounces, and is inflated to seven or eight pounds of pressure.

Service is made from behind the back line in the right corner. The ball may be served underhand, sidearm or overhand, using a closed fist or open hand, and it must clear the net on the service. The ball may be hit a maximum of three times by one team and over the net or the team loses either the service or the point. An individual player may not hit the ball more than once in succession. For example, should player A hit it, and then player B, it may be hit once again by player A. A team may score a point only when it is serving and 15 points constitute a game provided the opponent is defeated by two points or more. If the score is 14-14, the game continues until one team has a two point advantage.

Touching the net by a player is a violation whereby the team either loses the ball or a point. Stepping over the center line, directly below the net, is also a violation, resulting in the same penalty. One rule that is generally called incorrectly is the one concerning service. When the ball touches the net on the service it is an *out* for the serving team, even though the ball goes over. During a volley, however, a ball hitting the net and then going over is a good ball



DIAG. 3 DIAG. 4 DIAG. 5

and in play. Reaching over the net during play is also a violation. A ball rebounding off the net is in play.

In preparing a team, the reading and discussion of one rule each time players get on the court until all the rules are covered, will serve to increase the interest and skill of the game. Whether a team is readying itself for interschool or intraschool competition, tournament, or class play competition, the team that is well versed in the rules can be counted on to perform with a minimum of technical errors.

The skills in volleyball are not too many or too difficult. However, they pose a challenge for the player to develop as near perfection as possible. The player's fingers, hands, wrists, and legs are equally important. To develop strength and flexibility, there are a number of exercises and drills which can be utilized. Exercises such as push-ups, throwing the medicine ball, knee bends, and squat jumps prove helpful in building up the integral parts of the body needed in volleyball.

It must also be remembered that condition in volleyball plays a major role as it does in any sport. There are a number of sports that prove especially beneficial as conditioners for volleyball. Two of these are handball, which is excellent for the hands, wrists, and legs; and basketball which is excellent for the hands, wrists, legs, wind, and handling a ball that most closely resembles a volleyball.

Before starting play it is important that sufficient warm-up be taken by the players. Volleyball, although not a body contact game, has its share of injuries. The areas most commonly injured are the fingers, wrists, ankles, and knees. Fractures, sprains, and strains may be avoided or at least minimized by careful pre-game warm-ups. Having the players form a circle and tap the ball around, keeping it in the air is good for the hands and wrists. Practice serves, set-ups, and passes are also good. Spiking provides warm-up for the legs and can be aided by deep knee bends and squat jumps.

There is a saying in volleyball that a good big team is better than a good little team. Height is of great advantage and although a sturdy defense can be pretty effective at times it is rarely a match for a hard-spiking offense. Also, a truly successful defense depends a great deal on the ability of tall men to go up with the opposition's spikers in an attempt to block the ball. This type of defensive action requires some height and the ability to jump. However, a small man with the ability to pass in order to set-up for the big spiker, and who is alert on the defense, definitely has a place on the team.

Volleyball does not have too many varied skills, but the few that it does claim require teaching and a great deal of serious practice. The more important techniques of the game can be classed under serving, passing, setting-up, spiking, blocking, and general playing tactics both offensively and defensively.

Serving is generally one of the simpler skills, but too often it is minimized and difficulty is caused. In serving, the player may use the open hand or fist and may serve underhand, sidearm or overhand. The safest, easiest serve to execute and

control is an open, underhand serve. The fist offers a smaller control area on the ball, therefore, it is more difficult to manage.

Servers are rarely able to score aces on the other team. It is very difficult to *put a serve away* and, generally, the wisest strategy is to play the ball safe. A player should try to get the ball over the net and in the back court away from the front line. An advantage of the overhand serve is the added speed which will often cause the opponents some difficulty in smooth handling, thereby forcing them to use up their passes without a chance to set-up and spike. In the long run, however, the best serve is the safe serve, one that can be counted on to go over every time. Finally, the serve should be high enough to pass well over the heads of the front line of players, preventing their intercepting the serve and putting the ball away.

The underhand serve is fairly easy. Assuming the server is right-handed, he holds the ball in his left hand, and his left foot is forward. Using an easy, swinging underhand motion the ball is hit off his left hand with his open right hand. Throwing the ball up into the air and then hitting it makes the serve harder to control and puts more strain on the player's hand and wrist. No step is necessary; however, the server may start with his feet together and take a step forward with his left foot as he serves.

In using the overhand serve, the position of the player's feet are the same as in the underhand serve. The ball is thrown up with his left hand beyond the reach of his right hand as in a tennis serve. Rising on his toes the ball is hit with a complete overhand swing. This serve, although it is not easy to perform, can be very effective because of the speed of the service, thereby increasing the difficulty the opposing team has in handling the ball.

Passing

Passing, as in basketball, is the most vital phase of the game. If passes are not accurate, the offensive tactics of the team are greatly hampered. A team that is not accurate in passing would be limited to merely hitting the ball back over the net without any set plan or attack. There are two men who play an important part in the offense. They are the set-up man and the spiker. The set-up man does just what the name implies; he sets the ball up for the spiker who in turn *spikes* or *kills* it. The spotter on the team is the man who receives the serve first from the opponents. It is his job to pass the ball to the set-up man.

Finger control on the ball is vital in passing. Striking the ball with the fingers allows for the control of speed, direction, and height. Use of the palm or hand on the ball will mean poor control.

If the pass pulls the set-up man out of position or is too hard to handle, then the set-up man's job becomes increasingly difficult. Passes to the set-up man should be high and easy. In this way he can set the ball up with a pushing overhand motion which is more accurate than a lifting underhand motion. The best set-up man cannot perform well unless he gets reasonably good passes from the spotter. Passing should be stressed and the players should practice drills continuously in order to improve their efficiency and that of their team. A good drill is to have the players form a circle and keep the ball in the air by passing it around. Another drill is to have two lines facing each other. Then the ball is passed back and forth across the line, and the players practice to keep it high and easy as it should be during a game.

Setting-Up

Setting up the ball for the spike or kill is an art similar to shooting baskets in basketball. Sufficient height is needed and the nearness of the set-up to the net is important. It is good practice to have someone pass to the set-up man and that he attempt to tap the ball in a basket without use of the backboard. The set-up man should remain on his feet rather than go up with the ball, as he may lose a great deal of accuracy while he is off the ground. He should stay on the floor, poised and ready, using the overhand method whenever possible. The ball cannot be spiked unless it is set up higher than the net and close enough to assure clearing the net on a downward smash.

Spiking

The spiker can be no better than the set-up man's passes allow him to be. In spiking, jumping ability and timing are of paramount importance. The spiker should be able to jump high enough to get his hand on top of the ball. A two foot take-off is the easiest to learn, but a running one foot or two foot take-off will take the body higher and is necessary for a truly successful spiker. Hitting the ball with the open hand, using a flexible wrist, and rigid fingers allows for the greatest accuracy and control. Sufficient power can be achieved in this way without having to sacrifice accuracy. For added power the player should use a closed fist; however, it may be more difficult for him to achieve accuracy. A well-placed ball, does not require too much speed to be put out of the reach of the defensive players.

In spiking, a common error is turning the back to the net. To deliver the kill the spiker's body should either be facing the net or the side of his body should be toward the net. To smash a ball well, the spiker must know his distance from the net and judge the height of the ball with relation to the net. Also, he must keep his eye on the ball, yet he must always be aware of his opponents actions. Perhaps they have shifted their defensive formation, or a block may be attempted. He cannot see these things when his back is turned.

The set-up man and the spiker must work hand-in-hand. Without good set-up shots the best spiker is useless. His best efforts are brought into action when the set-up shot is good. When these two men are working in harmony they provide the team with a terrific offensive punch.

Blocking

Attempts at blocking present a hazard both physical and mental to spikers, causing them to hit into the net or out of bounds. A block should only be attempted on balls which are set up close to the net. When jumping up for a block the player's arms should be well above his head, and his hands and fingers should be extended straight up. It is not necessary to actually hit the ball on a block. A player should merely allow the ball to hit his hands; its own speed and rebound will send it back over the net. Very often the double block is used. If the double block is used, two blockers go up as one man, and both men try to stop the spiker's kill shot. All of the techniques that apply for the single block, apply to both blockers in the double block. A double block often prevents a spiker from passing a single block with a well-placed shot.

Placing the ball, when there is no opportunity to spike, is vital to good team play. The player must keep in mind the position of the opposing spiker and know just where the spiker is on the other side. The purpose is to keep the ball far away from him, or to give the opponents the

(Continued on page 42)

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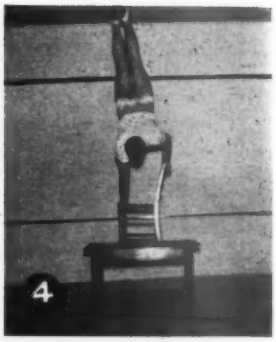
Intermediate Singles Balancing

By JAMES A. BALEY
Gymnastics Coach, Ohio Wesleyan University



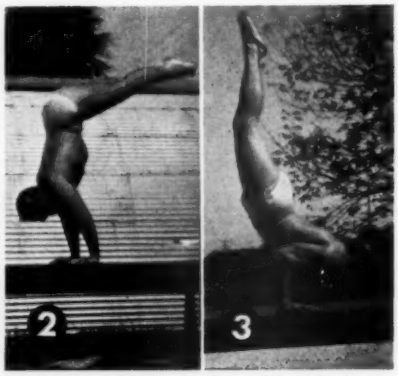
OUR article entitled "Elementary Singles Balancing" appeared in the *January issue*. The stunts presented in that article were aimed at the service class level. We hoped that some of the class members would develop an abiding interest in this challenging activity. It is to help fulfill the needs of these boys that this and the succeeding article. "Advanced Singles Balancing" are being presented.

Bent arm, bent leg press into handstand. Illustration 1 shows the action near its completion. This stunt is started in the squatting position, with the performer's hands placed shoulder width, his fingers well spread and pointing forward, about ten inches in front of his feet. His arms will be outside his knees. To get into position, the performer should spring from both feet to bring his hips up over his head with his legs tucked in. His hips should be directly over his head. He should allow his arms to bend but the angle between his forearms and upper arms should never be less than a 90° angle or he will experience difficulty in pressing up. To complete the stunt he should extend or straighten his arms and legs simultaneously. Now, the stunt should be tried without the jump and the performer should press right up from the squat position.

Bent arm, straight leg press into handstand. The starting position in this press is identical to that described for the bent arm, bent leg press. The pressing procedure is also identical except that the performer's legs are straightened as soon as they can clear the floor in the extended position. It is now even more important for him to bring his hips over his head as soon as possible. First, his hips are brought up and then as his straight legs move over his head, his arms are extended to complete the stunt.

Straight arm, bent leg press into handstand. The performer is now moving up the ladder of difficulty toward the difficult straight arm straight leg press up. The start is the same as in the previous stunts but this time the performer should keep his arms straight as he presses up. He should allow his shoulders to come considerably forward of his hands, keep his head well back, and bring his hips over his head with his legs tucked in. As his hips move over his head he should bring his arms back to the vertical position and extend his legs to complete the stunt.

Straight arm, straight leg press into handstand. If the performer succeeds in doing this stunt, he has *arrived* as a hand balancer. All of the principles learned in doing the previously described stunts will be applied in performing this stunt. The performer should bend forward and place his hands on the mat directly in front of his feet, keeping his legs straight. Now, he should carry his shoulders forward and move his hips over his head. After his hips are over his head, he should bring his extended legs over his hips as he brings his arms back to the vertical position. A performer may fall on his face a few times during the learning process but he should not become discouraged. The necessary strength and skill will come with practice. This press is shown in Illustration 2.



Tiger press. This stunt is started from the elbow balance described in "Elementary Singles Balancing" which appeared in the *January issue*. In the elbow balance the performer should overbalance and jerk forward off his forearms to his hands. This is the position in the stunt shown in Illustration 3. The performer's upper arms should not be allowed to drop below a horizontal position or he will experience difficulty in completing the press into the handstand. In the illustration the performer's upper arms are in a dangerously low position. For perfect form his legs should have been straight. Now, without stopping he should press right up into the handstand.

Handstand on chair. This stunt is shown in Illustration 4. Before trying it the performer should first be able to press into a good steady handstand. A chair with a relatively straight back should be selected. First, the stunt should be mastered with the chair on the floor (not mat). Then to make it look more spectacular the performer should put the chair on a table and press up. It is much easier than it appears. The performer should keep the bulk of his weight on his extended arm. In the illustration it is the right arm.

One arm half lever. This stunt is shown in Illustration 5. In order to get into this position the performer should get on his hands and knees on the floor. He should move his right hand back and place it palm down, with his fingers pointing sideward just in front of his right knee. Now, he should extend his right leg backwards, (toe on the floor) and place his right elbow just inside his right pelvic bone. Then he should extend his left leg. Now, he should pull his feet, legs, shoulders, and head up to place his body in a nice arch. His body should be tipped so that his left shoulder is slightly higher than his right shoulder. When he

(Continued on page 47)

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By CHARLES F. STUBBLEFIELD

Baseball Coach, N. R. Crozier Technical High School, Dallas, Texas

Infield and Outfield Defense

INFIELD and outfield defensive planning must be a continuation of the *down the middle* strength described in the article *The Heart of Your Defense: Pitching and Catching, Athletic Journal,* April 1953.

Following the pitcher and the catcher in importance defensively are the shortstop and the second baseman. The qualities needed by the boys who are to play these positions are almost identical. In selecting boys to play either of these positions the coach must find lads who are fast, smart, sure glove-men and who have good throwing arms. The shortstop, of course, must have the stronger arm of the two. If the coach can find a boy who has all of the shortstop qualities but whose arm is not quite good enough for the long throw, he may have an outstanding defensive second baseman. If there is to be real defensive strength in the infield, it must be at these positions. Many coaches try to insert a hitter into the line-up at second base and lose much of their defensive strength as a result. Here are the two positions on the infield where defensive strength must be paramount if the team is to win consistently.

At third base should be the third most agile boy in the infield. Compared with second base and shortstop, the position at third is easy to learn. It is at third that the coach may insert hitting power in the form of a converted outfielder or good-hitting pitcher without fear of crippling his defense.

It is often noted that coaches are reluctant to shift a good defensive third baseman to shortstop or second base. Such a change should be made any time a defensive weakness appears or any time more power is needed in the line-up. The defensive weakness may be bolstered by the shift of the third baseman to short or second. Power should be added at third or first, never at short or second unless the boy is an outstanding defensive player.

The first baseman has a job similar in many respects to the third baseman. Generally speaking, the first baseman does not have to be a great defensive player but he should be adequate. Plays peculiar to this position are bunts and slow rollers to the right side of the infield and cut-off plays on throws to home plate. While size is not an absolute requisite it is sometimes comforting to schoolboy infielders to have a large target at which to throw.

CHARLES STUBBLEFIELD attended the high school where he now coaches, having received the Ross Bedell award in 1940 as the outstanding high school athlete in the Dallas area. Following three years as an army pilot, he graduated from East Texas State. He also assists in football and basketball. Last spring Stubblefield prepared two articles for us and this is the first of three articles for this year.

In the outfield the center fielder completes the core of the defense. The fastest, most alert and surest fielder should be played in center field. It is up to the coach to determine who his outstanding outfielder is and gear the outer defenses around him. A good defensive center fielder can carry a light batting average and still be an asset to his team. As in selecting the shortstop and second baseman, defensive ability must be the prime consideration in selecting a center fielder.

In left and right field some defensive strength may be sacrificed for hitting strength. The better defensive player should be played where he will handle the most chances for outs. Before the game the coach must try to determine where the opposition is apt to hit the ball most frequently. His answer will depend on two points: 1) the number of left-handed hitters in the line-up, 2) The speed of his own pitcher. When a team is blessed with a good fast ball pitcher who can overpower many of the high school boys he faces, it is usually sound to play the better fielder in right rather than in left field. Such a move will frequently cut off twisting line drives and sliced fly balls that fall away from a poor fielder.

When the personnel has been studied and the strongest defensive team available has been aligned, the individual defensive players must be drilled until they become a closely co-ordinated defensive machine.

Before any group work is done on the baseball practice field it is imperative that all of the boys be thoroughly warmed-up. Boys of high school age, especially, want to throw hard too early in the practice. Any routine which the coach can devise to delay this throwing somewhat will save arms not only in the early season, but later on as well. Even after the boys are in shape they must never be allowed to make long or hard throws before they are well warmed-up.

A practice routine which insures thorough warm-up and which helps group unity begins with two long slow laps around the field for each member of the team. Running these slow laps not only warms the legs, it begins to loosen the back and shoulder muscles as well. When the two laps have been completed the infielders, outfielders, pitchers, and catchers as separate groups should circle and do five or ten minutes of limbering up exercises on their own. These exercises might include any light exercises which limber the legs, arms, and back. Almost any sort of movement in the spring sun will do much to limber the muscles.

When the limbering-up has been completed baseballs may be brought out and short catch games of thirty or forty feet should be played. The games of catch should last five to ten minutes and should be followed by pepper games, using six or seven boys in each game for 10 or 15 minutes. It is during the throwing sessions and pepper games that the coach can cor-

(Continued on page 50)

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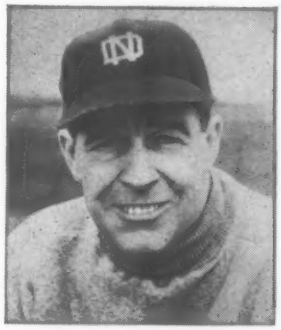

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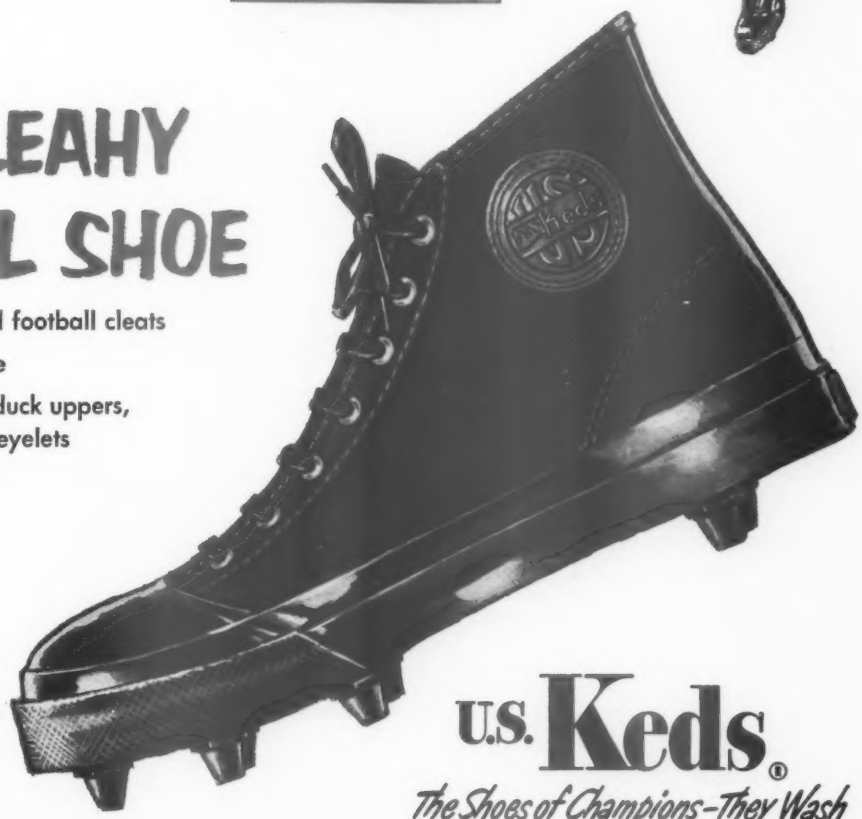

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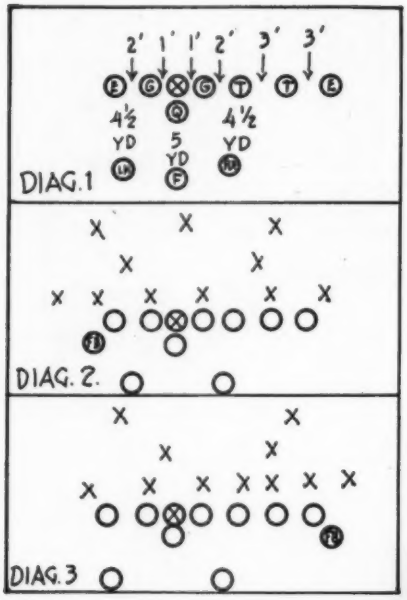
Unbalanced Line Split T

By JAMES A. PERRY
Lincoln Park, Michigan, High School



NECESSITY, imagination, and experimentation have done a great deal to improve the game of football as the years roll by. Gallaudet College, a college for the deaf, devised the huddle system in order to improve its method of signal communication. Knute Rockne installed the famous Notre Dame shift after watching a group of chorines go through its terpsichorean maneuvers. Harold "Red" Grange, who had an overabundance of energy, was put in motion on plays where he did not carry the ball.

At the present time, many offensive and defensive systems are being modified, developed, and operated by the amateur, professional, scholastic, and collegiate coaches. Consequently, the great game of American football is reaching new heights. Despite the cries of overemphasis, subsidization, and commercialism, no one can deny the fact that the type of football that is being coached and played is getting better and better.

The single wingback, short punt, T, and other formations all are potential fields for football experimentation. The split T formation, one of the newest developments in the game, provides ample proving grounds for the ambitious coach.

It is not the purpose of this article to present a complete repertoire of plays for this type of offense — the unbalanced line split T — but rather to show 20 basic variations which we believe are important. In most cases, each variation can be utilized to execute quick-opening plays, reverses, pitch-outs, traps, and forward passes.

Suggested spacing for the linemen and the alignment for the backfield men are shown in Diagram 1. However, they must be flexible in relation to the type and pattern of defense that is applied against them. In addition, adjustments may have to be made because of the personnel available.

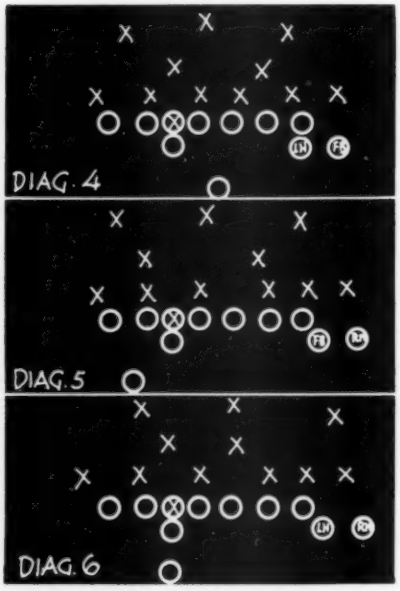


Diagram 2 shows the fullback winged to the short side against an overshifted 6-2-3 defense.

The fullback is winged to the long side against an overshifted 7-2-2 defense (Diagram 3).

A spread formation offense is simulated by winging the left halfback and flanking the fullback against a 6-2-2-1 pattern (Diagram 4).

Diagram 5 also simulates a spread formation offense by winging the fullback and flanking the right halfback. In this case, the 6-2-2-1 defense must adjust itself to meet the threat of the short-side buck.

Diagram 6 shows how a 6-2-2-1 defensive pattern might have to readjust itself to cope with the area which could be vulnerable to a quarterback sneak or the power smashes of the fullback.

In Diagram 7 we see the left halfback flanked and the right halfback winged to the short side against a 5-3-3 defense.

Diagram 8 shows the fullback winged and the right halfback flanked against a 5-3-3 defensive system.

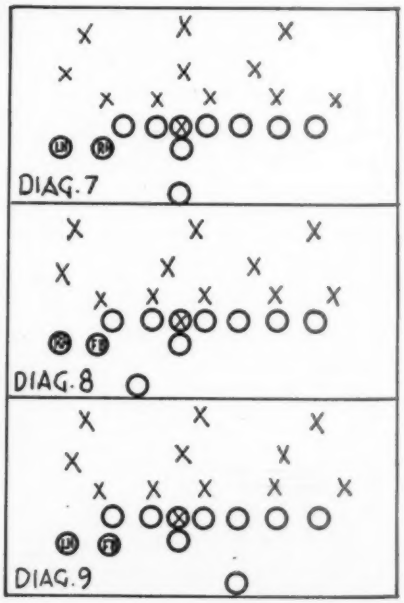
The 5-3-3 defensive alignment is shifted to meet the winging of the fullback and the flanking of the left halfback (Diagram 9).

Diagram 10 shows the quarterback in motion with the fullback receiving the pass from center. On this play the 6-2-2-1 defensive formation will have to shift just before the ball is snapped.

A 6-2-2-1 defense must make immediate adjustments to cover the man-in-motion to the long side as shown in Diagrams 11, 12, and 13.

The man-in-motion to the short side

(Continued on page 58)



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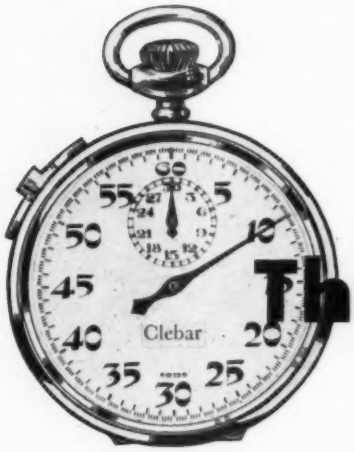

The Ten-Flat Man

By KENNETH D. MILLER
Track Coach, Florida State University

MOST coaches will probably agree that one of the most carelessly used terms in athletic parlance is the 10-flat man. Every good running back, every clever basketball player, and every other athlete whose ability of one kind or another makes him stand out among his teammates is labeled with this noteworthy aptitude. Of course, football players just do not run that fast in their working clothes, and the particular muscular development resulting from basketball and most other athletic sports certainly does not aid an athlete's natural sprinting ability. It is interesting to note that Glen Davis, Army's *Mr. Outside* of a few years back, has an officially timed best mark of :10.8 for 100 yards in football gear, and this performance is listed by Gordon Menke as one of the best times on record.

Honest ten-second sprinters are a very rare combination of physical, mental, and emotional characteristics. They are so unusual in the population distribution that the experienced coach takes all allegations concerning such runners with warranted skepticism until he personally has seen the runner in question perform against adequate timing.

On the other hand, it is a very happy coach, indeed, who finds himself blessed with one or more team candidates possessing this estimable attribute. Sprinters are the backbone of a track team, and good sprinters correlate with good seasons.

The total effort involved in successful sprinting performance is a complex combination of many intricate factors, perhaps largely environmental, but the potentiality for fast running is an innate characteristic which an athlete either has or does not have. Sheer speed is not a skill which can be developed in the runner. It is an inherited trait, and one which many students of track and field sincerely believe should not be tampered with by too much coaching. Col. Bill Hayward, the almost legendary former track coach at Oregon, used to say that if a coach has a good sprinter he should do two things: "be happy, and let him alone!"

Finding the Sprinter

In the typical high school situation the track coach is not often presented with ready-made dash men, and thus his problems differ somewhat from those of his college colleagues. In the first place, he must discover the students with promising sprinting potential. Sometimes this is not too difficult since the boy with such ability is usually aware of his speed advantage, even though its relationship to track and field athletics may not have occurred to him. He is the one who has been able to outrun his contemporaries all through childhood, and who, as a youngster, usually was a standout in games of low organization simply because he was quicker than others of his age group. Even when the fast boy does not recognize his ability, his immediate friends will know of it, and a few judicious questions directed toward student leaders in a new high school group will frequent-

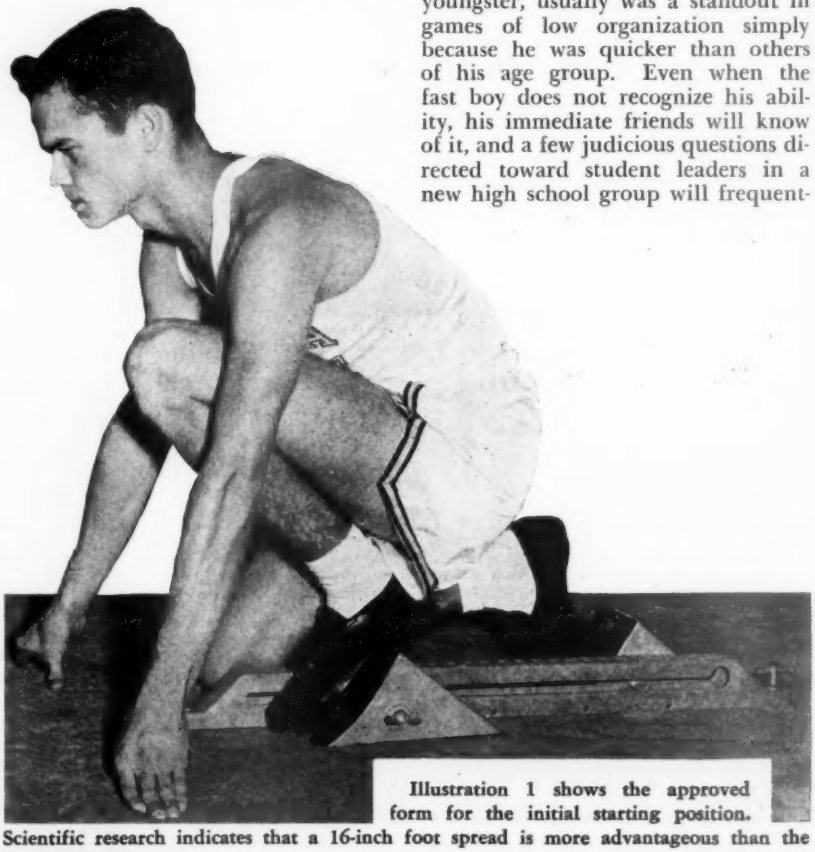

Illustration 1 shows the approved form for the initial starting position. Scientific research indicates that a 16-inch foot spread is more advantageous than the so-called bunch start.

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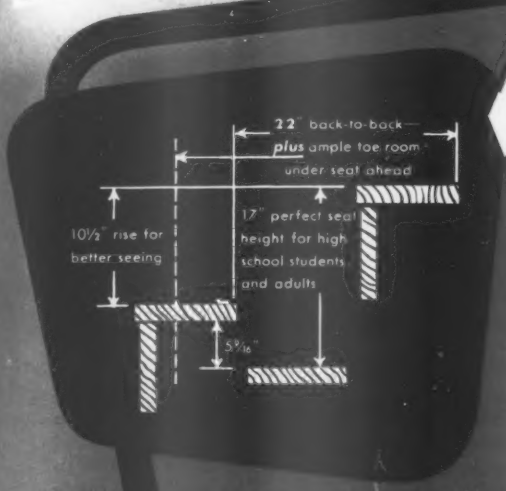

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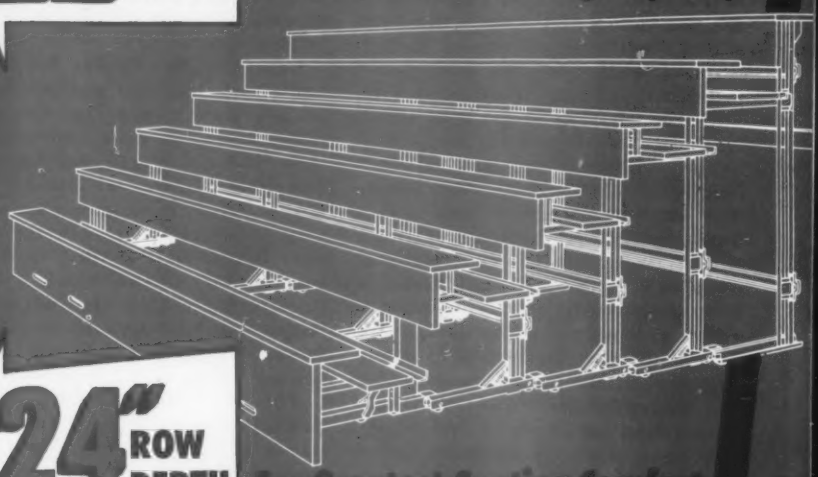

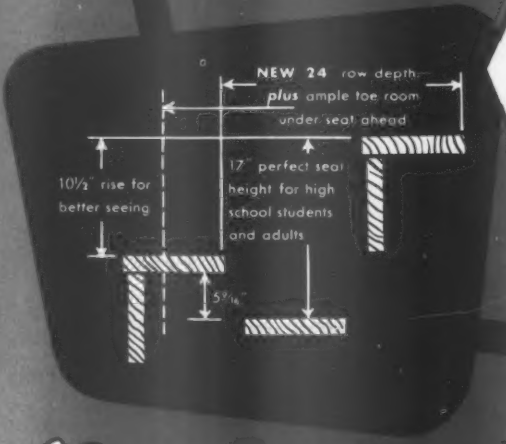

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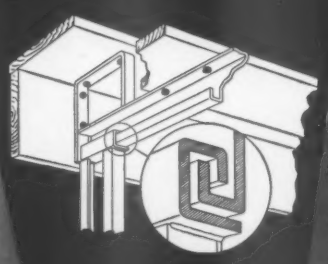

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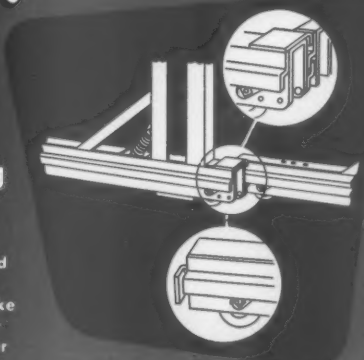

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ly provide a great deal of information regarding the speed, and other exceptional physical abilities, of members of the class.

A more precise means of ferreting out sprinters among new students is to run the group through a 50-yard or 75-yard dash test. Since a testing setup is a vital part of any good physical education program, the addition of a sprint event to the regular program test battery should be simple to organize and administer.

Physique does not seem too important a factor in the total make-up of the fast runner. Although there are scholars who suggest that characteristics of body size and body build provide significant contributions toward the selection of sports in which an athlete will perform most adequately, potential sprinters cannot readily be classified by these traits. The experienced coach knows that long legs and relatively short trunk length are physical characteristics common to runners, but limitless other—apparently more important—essentials enter into the making of a good sprinter. Dash men of championship caliber have ranged in size and shape between short and tall, slender and stocky, light and heavy, and most possible combinations of these several variations.

One other aid in locating sprinters is that despite the fact that the fast individual may be practically any size and body shape, he usually exhibits rather typical mannerisms. The sprinter type has short reaction and reflex times, and is notably motor-minded. These athletically beneficial traits are usually found in the boy who is high-strung. The fast runner is alert, restless, vigorous, and quick of movement. A coach should look for the sprinter among boys with nervous, spirited temperaments, for this is a definite distinguishing mark of the champion dash man.

Starting

In any discussion of performance techniques, a preliminary understanding must be that there are many ways of doing a thing right. As a matter of fact, *any* form that works best for a particular individual is the right way for him. In working with sprinters the coach must remember that the only real test of ability is measured by the stop watch, not in terms of which runner looks the best, or which one's technique most closely follows the currently approved practice. The many successfully employed variations in running style underline this point, and we are attempting in this article not to promote any particular technique as the final word in performing a skill, but merely to present a brief summary of the ways in which certain coaching problems involving sprinters are handled at Florida State University.

Recent experimental studies have provided the profession with some interesting information concerning starting techniques. For example, most sprinters during the past fifteen years have used some form of the bunch start, first employed, according to some observers, by Howard Drew as long ago as 1914.

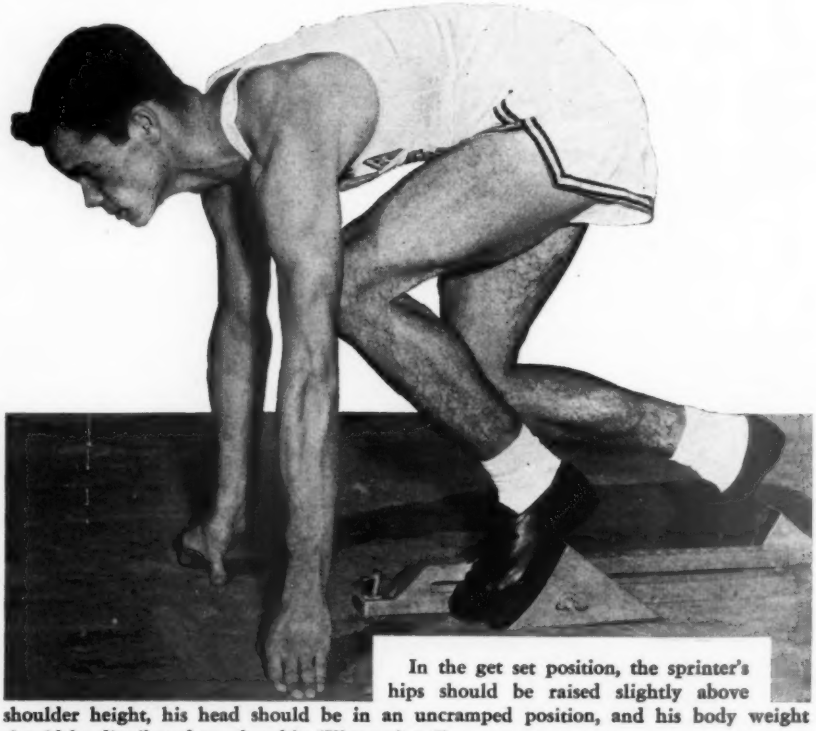
Research after World War II actually indicated that the bunch start, with a foot spacing of roughly 10 inches, resulted in a faster getaway than did a longer spacing, and, consequently, was a superior technique. Later experimentation, however, points out that while the bunch start results in less time in leaving the blocks, it also results in less velocity than that secured from a longer foot spacing, and significantly slower elapsed times at both 10 yards and 50 yards.

This particular research concluded that a 16-inch distance between blocks was a much more effective spacing than the closer, widely used bunch form. Such scientifically derived evidence has been highly gratifying to those coaches who during the last few seasons have been—often almost apologetically—gradually reverting to the so-called medium start. All runners who use a crouch start should be taught to use the medium style from the time they first report to the squad.

The most efficient starting position for each sprinter is selected by having the athlete take the *on your marks* position using starting blocks pre-set at a 16-inch spacing. The hands are placed on the ground at least shoulder-width apart (some men feel more comfortable with a wider spacing), the fingers forming a comfortable tripod, and with most of the body weight on the right knee (Illustration 1).

From this attitude the athlete assumes the *get set* position by raising his hips to an elevation slightly higher than his shoulders. Some rather inconclusive research has been conducted on the effect of the hip position on starting time, indicating that a high hip elevation results in a faster getaway. This study was made using the bunch start, and with the recommended medium start most runners find that a high hip position seems to result in a decided loss of balance during the first few strides which, of course, has an adverse effect on elapsed time.

In the *get set* position the sprinter



In the get set position, the sprinter's hips should be raised slightly above shoulder height, his head should be in an uncramped position, and his body weight should be distributed comfortably (Illustration 2).

adjusts his hands forward or backward until the body weight is supported largely on the hands, but with enough weight on the forward leg so that there is no discomfort in maintaining the attitude for several seconds (Illustration 2). This hand position is then marked on the track, and a steel tape provides the proper distance from the starting line to the front block for the individual sprinter concerned. This obtained measure is subject to possible slight changes as the runner experiments with various forward and backward hand setting through the pre-season practice. Moving the hands forward will place an additional proportion of the body weight on the arms and hands, while sliding the hands to the rear will shift the weight to the forward leg. Sprinters with relatively weak fingers will find this latter placement the more comfortable position. Despite any such adjustment of the hands, the 16-inch distance between blocks remains constant even though at first it may seem awkward to one who has become accustomed to the bunch start.

The position of the head during the start will vary widely among different athletes, but a compromise position between a neck-cramping, head-up placement, and a blind, chin-on-chest carry is recommended. Fifteen feet in front of the starting line, or enough forward view to maintain adequate orientation, is suggested as a point-of-focus for the runner's eyes.

Breathing should be deep and regular while the sprinter is standing at his blocks awaiting the first starting command, in order to reduce the carbon dioxide content of the blood. At the first command, breathing should revert to normal. Research has shown that at the order *get set*, the experienced sprinter takes a deep breath and holds it until the starting signal is given. This is a reflex habit which focuses attention on the anticipated starting simulus. It is similar in nature to the manner in which an aiming hunter holds his breath as he squeezes the trigger of his rifle, and it serves the same purpose of inhibiting all responses except the one concentrated upon.

KENNETH MILLER graduated from Oregon and then assisted at his alma mater for one year. Following a successful period in California high schools, Miller served in the navy as an aviator. After the war he was track coach and assistant basketball coach at Lock Haven (Pa.) Teachers College. He is now in his sixth season at Florida State.

After starting, breathing should be natural, and should never be forced into a predetermined pattern. Many young sprinters apparently worry more about breathing properly than about any other single phase of racing. Most of the solicitude is completely unwarranted. At Florida State no specific recommendation is made to the inevitable question from freshmen sprint candidates concerning how they should breathe during a race. The query is handled by explaining that breathing during a race will take care of itself if there is no conscious attempt to control it, and that it is not a significant problem to the sprinter who concentrates wholeheartedly on the job at hand—that of getting to the finish line in the shortest possible time. To date no apparent difficulty has been experienced in convincing dash men that

(Continued on page 42)

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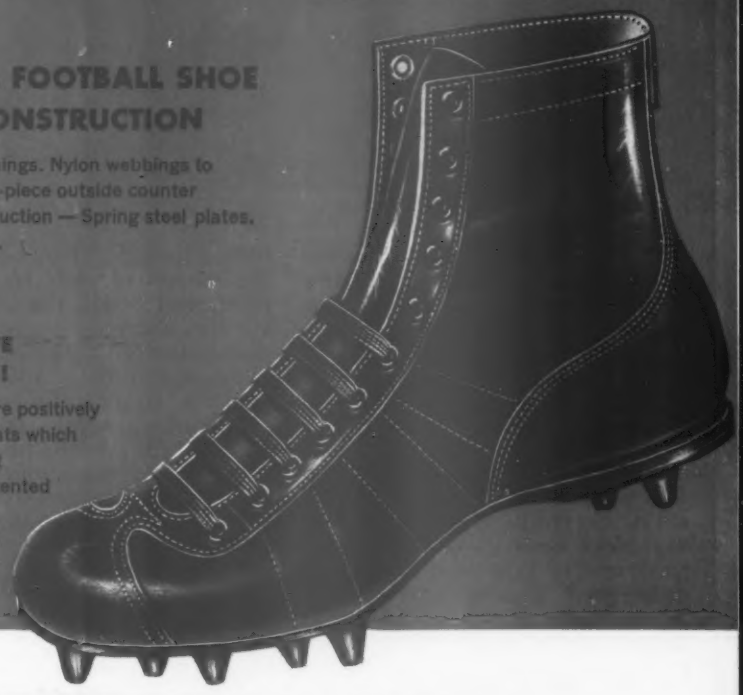

7 OUNCE* MEET SHOE WITH WING-FLEX (featherweight) CONSTRUCTION

No. 735. Yellow Back nylon stitched Kangaroo uppers and linings. Patented non-stretch white nylon toe to heel outside reinforcement. Extra long roll-over tongues — reinforced roll-set eyelet. Selected chrome bend leather tap and heel lift, attached without exposed stitching. Lockstitch Construction. Spring steel plate. Hardened steel detachable spikes.

No. 725. Same as No. 735 — except Blue Back Kangaroo.

13 OUNCE* PROFESSIONAL MODEL WITH WING-FLEX (featherweight) CONSTRUCTION

*Size 8

No. 234. Yellow Back nylon stitched Kangaroo uppers and linings. Nylon webbings to prevent stretching. Extra long roll-over tongues — telescopic eyelets. Solid leather counters in outside counter pockets. Selected leather straight outersoles. Goodyear welt construction. Richardson's featherweight Pro cleats. Solid copper rivets.

No. 224. Same as No. 234 —except Blue Back Kangaroo.

f you nearest SPOT•BILT dealer **SPOT•BILT** 160 MUNROE ST., CAMBRIDGE, MASS.

Illustration 1

Illustration 2

Pitching Control

By JAMES SMILGOFF
Baseball Coach, Taft High School, Chicago, Illinois

PITCHING control is dependent to a great extent upon pitching actions, that is, upon pitching actions which involve a minimum of body actions. Too many pitchers do too much with their bodies. They rock, spin, and jerk their bodies forward into throwing position with a maximum of muscular activity and a minimum of co-ordination. They use too much effort and not enough effect, or result. Good pitching is dependent upon good control, and good control is dependent in turn upon good physical body control. When body actions are jerked or thrown out of control there is no pitching control.

1. The pitcher should toe out while he is preparing for the upswing of his arms and his body pivot (Illustrations 1 and 2). Thus, he cuts down the amount of body action on the pivot, and makes the pivot easier. He does not, however, cut down the effectiveness of his pivot. This type of action also makes it easier for the pitcher to keep his eyes on the target.

2. Rocking actions involving the back and chest should be eliminated. Such rocking actions move the pitcher's head and eyes, and create difficulty in concentrating on the target (Illustration 3).

3. The pivot should be kept under control. A pitcher should not be fooled by newspaper pictures which show an exceedingly high and large pivot. These pictures have eye-appeal when taken from the ground up. They definitely are not conducive to good pitching control. Oftentimes too large a turn on the pivot causes the pitcher to lose sight of the plate. A short pivot with a straight upper body helps control (Illustration 4).

4. It is important that the pitcher see the target and the plate clearly, all of the time, from the beginning to the end of the entire pitching action. Some pitchers in trying to throw harder, wind themselves up into corkscrews and jerk their heads so that they lose sight of the plate momentarily. This type of pitcher will have momentary control rather than consistent control. Consistent control depends upon consistently good body actions which allow for good eye-target control.

5. A right-handed pitcher should stride slightly to the left with his stride foot and a left-handed pitcher should stride slightly to the right with his stride foot. The stride foot should not be more than six inches off a direct line with the pivot foot (Illustrations 5 and 6). This type of action allows for greater freedom of throwing action, and what is more important, prevents the pitcher from striding and throwing across and against his body.

Illustration 3

Illustration 4

JIM SMILGOFF lives baseball nine months of the year and the other three turns to football. During the school year he coaches his Taft team, always a strong contender in Chicago high school baseball circles. During the summer he conducts his highly successful Midwest Baseball Camp. He has served for a number of years as a scout for the Chicago Cubs and prepared numerous articles for our pages. His illustrated article, "Major Faults in Batting," which appeared a year ago received much favorable comment.

Genuine ... BASEBALL BATS

LOUISVILLE SLUGGER — HILLERICH & BRADSBY Co. — LOUISVILLE KY.

We make them RIGHT . . . Performance makes them FAMOUS.

125 GENUINE AUTOGRAPHED LOUISVILLLE SLUGGER—POWERIZED. Natural Ash White Finish. Turned from select, air-seasoned, second growth Northern White Ash. Genuine Autographed models of the twenty-five famous sluggers listed below (description of each appears on page 4) comprise the No. 125 group. An assortment of not less than six different models is guaranteed to each carton of one dozen. Packed 2/33", 5/34", and 5/35" bats in each carton. Shipping weight, 27 pounds ..... **Each $3.80**

MODELS: Richie Ashburn • Yogi Berra • Joe DiMaggio • Walt Dropo • Ferris Fain • Nelson Fox • Bill Goodman • Rogers Hornsby • George Kell Ralph Kiner • Ted Kluszewski • Whitey Lockman • Mickey Mantle • Ed Mathews • Dale Mitchell • PeeWee Reese • Jackie Robinson • Babe Ruth Hank Sauer • Al Schoendienst • Enos Slaughter • Duke Snider • Vernon Stephens • Mickey Vernon • Ted Williams

125S Special GENUINE AUTOGRAPHED LOUISVILLE SLUGGER—POWERIZED. Quality and finish identical to No. 125 but turned to slightly smaller dimensions for College and High School hitters. Listed below are the Autographed models in the 125S group. An assortment of not less than six different models is guaranteed to each carton of one dozen. Packed 3/32", 5/33", and 4/34" bats in each carton. Shipping weight, 26 pounds..... **Each $3.80**

MODELS: Joe DiMaggio • Ferris Fain • George Kell • Ralph Kiner • Mickey Mantle • Ed Mathews • Jackie Robinson • Babe Ruth • Hank Sauer Duke Snider • Vernon Stephens • Ted Williams

125 Ebony Finish—GENUINE AUTOGRAPHED LOUISVILLE SLUGGER—POWERIZED. Turned from choice, air-seasoned, second growth timber. Rich Ebony Finish with gold branding and beautiful, full-color picture decals of players shown below. Six different models are guaranteed to each carton of one dozen. Packed 2/33", 5/34", and 5/35" bats in each carton. Shipping weight, 27 pounds ..... **Each $3.80**

MODELS: Ferris Fain • George Kell • Ralph Kiner • Mickey Mantle • Jackie Robinson • Ted Williams

43 ASH FUNGO. GENUINE LOUISVILLE SLUGGER—POWERIZED. Natural Ash White Finish. Turned from select, air-seasoned, second growth Northern White Ash. Each carton of one dozen contains three (34") infield and nine (37" and 38") outfield fungoes. Shipping weight, 20 pounds..... **Each $3.80**

HILLERICH & BRADSBY COMPANY, INC., LOUISVILLE, KENTUCKY

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BASEBALL BATS

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125S Special GENUINE AUTOGRAPHED LOUISVILLE SLUGGER—POWERIZED. Quality and finish identical to No. 125 but turned to slightly smaller dimensions for College and High School hitters. Listed below are the Autographed models in the 125S group. An assortment of not less than six different models is guaranteed to each carton of one dozen. Packed 3/32", 5/33", and 4/34" bats in each carton. Shipping weight, 26 pounds..... **Each $3.80**

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Richie Ashburn
Very large, long barrel with very large handle and small knob.

Al Schoendienst
Barrel tapers gradually from medium-large to small handle—large knob.

Joe DiMaggio
Medium size barrel with gradual taper to small handle. Large knob.

Mickey Vernon
Medium barrel with long gradual taper. Very small handle. Large knob.

Nelson Fox
Very large, long barrel tapers to very large handle. Small knob.

Dale Mitchell
Very large, gradually tapering barrel. medium handle that tapers up to large knob.

Ralph Kiner
Very large barrel with normal taper. medium size handle that builds up to large knob.

Ferris Fain
Large end barrel tapers to a little below medium size. Very small handle. Large knob.

Walker Dropo
Barrel tapers gradually from medium size end to very small handle. Very large knob.

Mickey Mantle
Medium size barrel, with long, gradual taper to very small handle. Very large knob.

Ed Mathews
Long barrel tapers quickly from medium size to a very small handle. Handle graduates to large knob.

Whitey Lockman
Barrel large at end, tapers to less than medium size. Handle very small with large knob.

"Pee Wee" Reese
Large near end, barrel tapers to medium size. Handle medium large with very large knob.

Ted Kluszewski
Very large barrel tapers quickly to medium size. Handle medium large with very small knob.

Ted Williams
Small barrel that tapers down to very small handle. Handle builds up sharply to large knob.

Ed "Duke" Snider
Barrel tapers from large end to below medium size. Very small handle that goes up to very large knob.

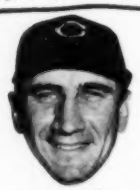
Enos Slaughter
Medium large barrel, with gradual taper to small handle. Handle builds up quickly to large knob.

"Babe Ruth"
Barrel large at end, tapering off to below medium size. Very small handle that builds up sharply to large knob.

Rogers Hornsby
Barrel tapers quickly from very large end to medium size. Handle slightly above medium size. Very small knob.

Bill Hoffman
Medium size at end, barrel tapers gradually, then drops quickly into medium handle. Very small knob.

Yogi Berra
Large at extreme end, barrel tapers slightly below medium size. Handle, very small tapers up quickly to very large knob.



Hank Sauer
Very large at end, barrel graduating quickly to medium size. Medium large handle and extremely large knob.

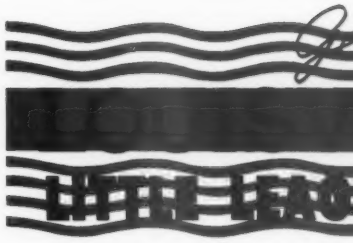
Vernon Stephens
Long, medium-size barrel that tapers noticeably where it enters into extremely small handle. Handle builds up quickly to large knob.

Jackie Robinson
Barrel medium size at end, but comparatively very large farther down, having very little taper. Handle extraordinarily large. Very large knob.

George Kell
Small near end, barrel tapering down slowly to slightly below medium size. Very small handle that builds up quickly to large knob.

The models of these famous hitters comprise the 1954 Genuine Autographed Louisville Slugger 125 Bat line.

LOUISVILLE SLUGGER BATS

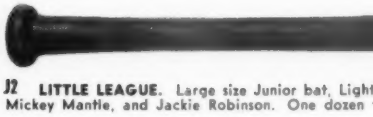


Bats shown

125LL **GENUINE AUTOGRAPHED "Little Leag**
and Hickory. Each carton of one dozen contains a
with pictures and autographs of George Kell, Jack
3/32" bats in each carton. Shipping weight, 23 po

125J **GENUINE AUTOGRAPHED "Little League**
White. Color decals with autographs and pictures
3/30", 5/31", and 3/32" bats in each carton of on

JL **LITTLE LEAGUE "It's a Louisville."** Large
of George Kell, Ralph Kiner, Babe Ruth, Ted Willi
dozen. Shipping weight, 23 pounds



J2 **LITTLE LEAGUE.** Large size Junior bat, Light
Mickey Mantle, and Jackie Robinson. One dozen

Bats for

Bats of Nos. 125S, 110S, and 35S (also the va
Babe Ruth League was formerly Little-Bigg

& JUNIOR BATS

Bats shown on this page are approved for Little League play.

ED "Little League" LOUISVILLE SLUGGERS. Large size Junior bats. Turned from select air-seasoned Northern White Ash dozen contains approximately half with Natural White Finish and half with Antique Brown Finish. Beautiful, full-color decals George Kell, Jackie Robinson, Mickey Mantle, Ralph Kiner, Babe Ruth, and Ted Williams. Packed 1/29", 3/30", 5/31", and ing weight, 23 pounds ..... **Each $2.85**

D "Little League" LOUISVILLE SLUGGER. Medium size Junior bat. Turned from select Ash and finished in Natural ASH phs and pictures of George Kell, Ralph Kiner, Babe Ruth, Ted Williams, Mickey Mantle, and Jackie Robinson. Packed 1/29", ach carton of one dozen. Shipping weight, 19 pounds ..... **Each $2.00**

ılsville." Large size Junior bat with attractive Ebony Finish and gold branding. Color decals with autographs and pictures e Ruth, Ted Williams, Mickey Mantle, and Jackie Robinson. Packed 1/29", 3/30", 5/31", and 3/32" bats in each carton of one ds ..... **Each $1.85**

Junior bat, Light Brown Finish. Color decals with names and pictures of George Kell, Ralph Kiner, Babe Ruth, Ted Williams, on. One dozen to carton, lengths, 29" to 32". Shipping weight, 23 pounds ..... **Each $1.40**

Bats for BABE RUTH LEAGUE AND PONY LEAGUE Baseball

35S (also the various Little League and Junior numbers) are approved for Babe Ruth League and Pony League play. The merly Little-Bigger League.

LOUISVILLE SLUGGER
HILLERICH & BRADSBY Co.
LOUISVILLE, KY.

BASEBALL BATS

We make them RIGHT... Performance makes them FAMOUS...

110 MAJOR LEAGUE—"*It's a Louisville.*" Natural Ash White Finish. Turned from high quality, air-seasoned White Ash. Supplied in same assortment of famous sluggers' models listed under No. 125 (Page 1), with six different models guaranteed to each carton of one dozen. Lengths—2/33", 5/34", and 5/35"; shipping weight, 27 pounds ..... **Each $2.80**

110S Special. MAJOR LEAGUE—"*It's a Louisville.*" Identical in every way to the No. 110 but turned to slightly smaller dimensions for the particular use of High School and College hitters. Supplied in same assortment of famous sluggers' models listed under No. 125S (page 1), with six different models to each carton of one dozen. Lengths—3/32", 5/33", and 4/34"; shipping weight, 25 pounds ..... **Each $2.80**

35 MAJOR LEAGUE—"*It's a Louisville.*" Walnut Brown Finish. Turned from high quality, thoroughly seasoned Ash and Hickory. Six different famous sluggers' models guaranteed to each carton of one dozen. Lengths—2/33", 5/34", and 5/35"; shipping weight, 26 pounds ..... **Each $2.35**

35S Special. MAJOR LEAGUE—"*It's a Louisville.*" Identical to No. 35 but turned to slightly smaller dimensions for College and High School hitters. Each carton of one dozen contains at least six different models of famous sluggers. Lengths—3/32", 5/33" and 4/34"; shipping weight, 25 pounds ..... **Each $2.35**

11B BIG LEAGUER. Black finish with White Tape grip. An assortment of famous sluggers' models in each carton of one dozen. Lengths range from 32" to 35"; shipping weight, 26 pounds ..... **Each $2.00**

14W SAFE HIT. Finished in Natural Ash White and supplied in an assortment of famous sluggers' models, with six different models in each carton of one dozen. Assorted lengths from 32" to 35"; shipping weight, 26 pounds ..... **Each $2.00**

14 SAFE HIT. Dark Maroon Finish. Identical to No. 14W (above) except finished in rich Dark Maroon ..... **Each $1.85**

9 LEADER. Light Brown Finish. Assorted famous sluggers' models. Assorted lengths, from 32" to 35"; shipping weight, 26 pounds ..... **Each $1.40**

HILLERICH & BRADSBY COMPANY, INC., LOUISVILLE, KENTUCKY

Also Makers of Louisville Grand Slam Golf Clubs

SOFTBALL BATS

125Y OFFICIAL LOUISVILLE SLUGGER SOFTBALL MODEL 12. For the consistent hitter, a small barreled bat (2-1/16" in diameter) with straight taper to small grip. Antique Finish. Finest selection of Second-Growth Ash and/or Hickory. One dozen to carton, 6/33" and 6/34"; shipping weight, 19 pounds **Each $3.00**

125W OFFICIAL LOUISVILLE SLUGGER SOFTBALL BAT. Assortment of popular models packed in carton of one dozen. Turned from select Ash and/or Hickory, and Powerized. Finished in Natural Ash-White. Lengths, 6/33" and 6/34"; shipping weight, 23 pounds **Each $2.75**

125B OFFICIAL LOUISVILLE SLUGGER SOFTBALL BAT. A splendid assortment of models that will meet requirements of the various types of hitters. Saddle Brown Finish and White Tape grip. Turned from select Ash and Hickory, and Powerized. One dozen in carton, 6/33" and 6/34"; shipping weight, 22 pounds. **Each $2.75**

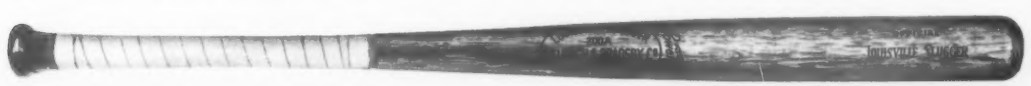
125C OFFICIAL LOUISVILE SLUGGER SOFTBALL MODEL 8. "Fast-Swing" Model for hitting fast pitching. Bottle-shaped, and quickly tapered to small grip. Natural White Finish. Turned from select Ash and/or Hickory, and Powerized. One dozen to carton, 6/31" and 6/32"; shipping weight, 23 pounds **Each $2.75**

250B OFFICIAL LOUISVILLE SLUGGER "BLACK BETSY" ASSORTED SOFTBALL MODELS. A splendid variety of models—answers full team requirements. Ebony Finish. Turned from select Ash and/or Hickory. One dozen in carton, 6/33" and 6/34"; shipping weight, 22 pounds **Each $2.75**

125T OFFICIAL LOUISVILLE SLUGGER SOFTBALL MODEL 6. For heavy hitters—a large bottle-shaped model—2-1/8" barrel, tapering quickly to a medium grip. Natural White Finish. Turned from select Ash and/or Hickory, and Powerized. One dozen to carton, 6/33" and 6/34"; shipping weight, 24 pounds. **Each $2.75**

250C OFFICIAL LOUISVILLE SLUGGER SOFTBALL MODEL 8 "Fast-Swing" Model for hitting fast pitching. Bottle-shaped and quickly tapered to small handle. Ebony Finish. Turned from select Ash and/or Hickory and Powerized. Each carton, 6/31" and 6/32". Shipping weight, 23 pounds **Each $2.75**

125L OFFICIAL LOUISVILLE SLUGGER SOFTBALL MODEL 1. For girl hitters. A small barreled bat, 2 inches in diameter, with gradual taper to a small grip. Natural White Finish, Ash and Powerized. One dozen in carton, 33" length. Shipping weight, 18 pounds **Each $2.75**



200A OFFICIAL LOUISVILLE SLUGGER SOFTBALL BAT. Supplied in assorted softball models. Powerized and finished in Brown Antique. Turned from high-quality Ash and/or Hickory. One dozen to carton, 31" and 32" lengths; shipping weight, 18 pounds **Each $2.30**

SOFTBALL BATS

In Softball as in Baseball... One Trademark stands Supreme

102 **OFFICIAL LOUISVILLE SLUGGER SOFTBALL BAT.** Assorted popular softball models of first quality Ash and Hickory. Oil Tempered and finished in Saddle Brown. Packed one dozen to carton, 6/33" and 6/34"; shipping weight, 23 pounds ..... **Each $2.30**

100C **OFFICIAL LOUISVILLE SLUGGER "FAST-SWING" SOFTBALL MODEL.** Turned from high quality Hickory and finished in Medium Brown. One dozen in carton, 6/31" and 6/32"; shipping weight, 23 pounds ..... **Each $2.30**

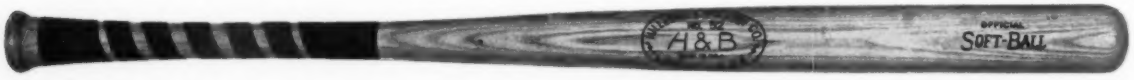
100W **OFFICIAL LOUISVILLE SLUGGER SOFTBALL BAT.** Assorted popular softball models. Turned from high quality Ash and/or Hickory. Natural White Finish and Oil Tempered. One dozen in carton, 6/33" and 6/34"; shipping weight, 22 pounds ..... **Each $2.30**

54 **OFFICIAL *"It's a Louisville"* SOFTBALL BAT.** Assorted models turned from Ash and Hickory. Brown Finish and Brown Zapon grip. One dozen in carton, 6/33"and 6/34"; shipping weight, 21 pounds ..... **Each $1.85**

54C **OFFICIAL *"It's a Louisville"* SOFTBALL BAT**—"Fast Swing" model. Made of Ash and Hickory, with Ebony Brown Finish. One dozen in carton, 6/31" and 6/32"; shipping weight, 22 pounds ..... **Each $1.85**

54L **OFFICIAL "IT'S A LOUISVILLE" GIRLS' MODEL.** Natural White Finish Ash with Blue Zapon Grip. One dozen in carton, 33" length; shipping weight, 21 pounds ..... **Each $1.85**

52H **OFFICIAL SOFTBALL BAT.** Turned from Hickory, and finished in Ebony. One dozen assorted models to carton, 6/33" and 6/34"; shipping weight, 23 pounds ..... **Each $1.40**



52 **OFFICIAL SOFTBALL BAT.** Light Saddle Tan Finish. Ash and/or Hickory. One dozen assorted models in carton, 6/33" and 6/34"; shipping weight, 23 pounds ..... **Each $1.40**

51H **OFFICIAL SOFTBALL BAT.** Turned from Hickory with Maroon Finish and Gray Zapon Grip. Assorted models. One dozen to carton, 6/33" and 6/34"; shipping weight 23 pounds ..... **Each $1.20**

50 **OFFICIAL SOFTBALL BAT.** Brown Finish. One dozen assorted models to carton, 6/33"and 6/34"; shipping weight, 21 pounds ..... **Each $1.00**

6. The pitcher should stride on the ball of his foot and not on his heel. He wants forward body action and not his heel jamming into the ground to jar body action. Also, he should stride in the same spot consistently. After each practice pitch, while warming-up, the spike marks should be checked. Spike marks that fall in various places during the stride indicate poor body control, and result in poor pitching control (Illustration 7).

7. All pitches should be made from the same arm angle. The pitcher should become accustomed to guiding his forward arm swing through the same plane and at the same angle. Every pitcher has one particular arm angle from which he releases the ball with ease, a minimum of effort, maximum speed, and control. Every pitcher's problem is to find this angle or spot through practice and experimentation. Once this spot is found it is up to the pitcher to remember it and to practice pitching from this arm angle in order to be *in the groove* with his arm action, and on his control (Illustrations 8 and 9).

8. The ball should be released well out in front of the pitcher's body and directly in front of his pitching shoulder. This type of release helps arm and body co-ordination on the throw and prevents the pitcher from being wild on high pitches (Illustration 10).

9. The pitch should be finished up with a full and complete follow-through and it should be fairly low. A complete follow-through helps to bring the ball down and over the plate easier, thus insuring better control. This is the final body action and it is a natural one. It keeps the entire body action in a smooth flow in order to maintain good body balance and pitching control through to the last body movement.

Illustrations 5 and 6

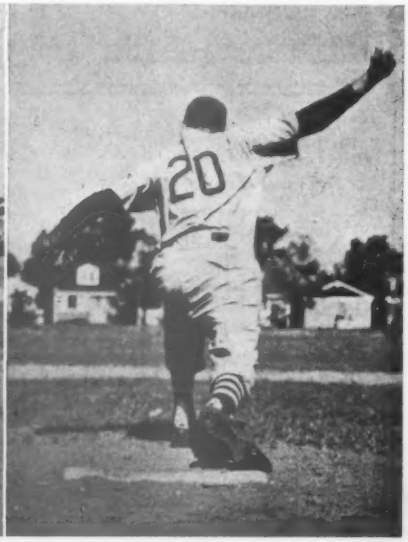
10. A boy should pitch often from the stretch position. Many pitchers are good when they can wind-up, but encounter difficulty when they are unable to do so. They should practice keeping body actions to a minimum while pitching from the stretch position, but most important of all, they should practice from the stretch position often.

11. Pitchers should throw to a plate daily or almost daily. Boys who use a catcher's shin guard, a chest

Illustration 7

Illustration 10

Illustrations 8 and 9



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protector, or some other object as a plate find that they have control difficulty when pitching to a plate.

Mental Control

1. Pitchers should concentrate on every pitch. They should get to know where every pitch is going. Complete concentration can lead to a 100 per cent possibility of each pitch being a strike.

2. No youthful pitcher is so good that he can aim for the center of the zone and hit the mark every time. However, if a pitcher does aim for the center of the batter's strike zone and is off the mark a little there is still a good possibility of throwing a strike. Should the same pitcher throw for the corner and miss by as little as one inch the pitch is a ball.

In the early part of the season it

Illustration 11

is oftentimes a good idea to pitch toward the center of the strike zone in order to insure better possibilities for control.

3. Pitchers should visualize the strike zone on every batter before pitching to each one. The height of each batter's strike zone may vary, but the width will remain constant. This visualization of each batter's strike zone provides the pitcher with a concrete target zone, something definite to throw to.

4. Pitchers should work from the center of the strike zone outward with each succeeding strike. Too many pitchers start their first pitch by trying to *nick* a corner. This type of pitching demands fine and delicate control which most pitchers do not have. As a result, the pitch is a ball, and the pitcher gets himself into a hole on the ball and strike count. If his next pitch misses the corner, which can happen very easily, then the pitcher is definitely behind the batter with a two balls and no strike count. He must then throw through the middle at a time when the batter is expecting him to do so. By throwing for the center of the strike zone with *something* on the ball, the pitcher stands a good chance of throwing a strike. Then he can throw his next pitch for the inside or outside one-half of the plate as desired. With two strikes and no balls or two strikes and one ball, he can then try to pitch on or just off the corners of the plate.

5. Young pitchers should know how big or how small their curve ball is breaking so that they will know where to start the ball in order to provide for the break of the ball curving through the strike zone.

Control Devices

1. The catcher and his paraphernalia should be used as a target. In the major leagues today control devices are constantly being sought. One of the latest devices is that of coloring the catcher's knee pads a bright color so that when he squats into his position his knee pads attract the pitcher's attention and act as a target for the low inside and low outside pitches. Colored chest protectors are worn by catchers as a target for the strike zone. Many pitchers use the catcher's shoulders as a target for high inside and high outside pitches.

2. A strike zone of heavy lumber should be built and padded with burlap bags or a worn out tumbling mat. It should be divided into four areas. Attach it to the ground or hang it on a backstop and have the boys pitch to it for control.

3. During the winter months a strike zone should be arranged on a basement wall using adhesive tape (Illustration 11). Pitchers should look at this strike zone often and become familiar with it. The boys should build up their visual image of the strike zone so that control will come easier in the spring. If it is possible to throw against this strike zone indoors, it is advisable to do so. If not, it is usually possible to stand as far away from the strike zone as space will permit and go through the pitching motions while becoming familiar with it.

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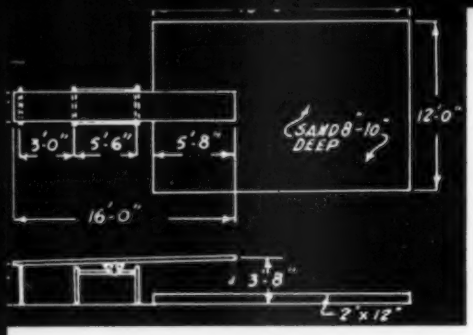

Teaching Skills in Diving

By JACK RYAN

Swimming Coach and Instructor of Required Physical Education, University of Florida

IN the United States fancy diving has long been a subject of interest to American sport fans, and American divers have had great influence in developing the art of diving as we know it today. Divers from the United States have been winning Olympic championships as far back as 1904. The record of our diving entries in the last two Olympic contests is indicative of the preeminence of our men in this sport. In 1948 in London, American divers placed first, second, and third from the three meter board and first and second from the ten meter tower. In Helsinski in 1952, we again took first, second and third from the three meter springboard and first and fourth from the tower. This is truly a remarkable record and one of which we can be proud.

The recent achievements of Miller Anderson, Bruce Harlan, Skippy Browning, Sammy Lee, and Bob Clothworthy can serve as the inspiration for a future group of Olympic divers. What young divers and diving coaches, too, must remember is that these men did not start at the top. Their present spectacular performances are based on constant hard work on the fundamentals of diving.

With the advent of the new thrilling twist dives, it is easy to understand why a youngster will want to put the cart before the horse and start right to work on dives which rate a high degree of difficulty. However, experience has taught us that divers are no exception to the athletic rule. Top-flight diving as well as championship football, basketball or baseball, must be based upon a sound knowledge of the fundamentals.

Each year a month or so before the actual start of team practice, the coach should call his divers together and spend time concentrating on springboard techniques before he ever allows his men to enter the water. The most convenient and the easiest way to do this is to construct a sandbox in which the divers can do their early season training.

The advantages of the sandbox are many. Perhaps the greatest advantage lies in the fact that the diver is relieved of worry over his entry into the water. He finds himself in an ideal situation wherein he can concentrate fully on the fundamental techniques of the approach, hurdle, and take-off. Using the sandbox also saves the diver a great deal of time and effort since he does not have to enter the water, swim to the side, and pull himself out as he practices each approach. Sandbox work is usually done in the fall before the competitive season starts so it has another value in the fact that it acts as a leg conditioner.

Mike Peppe, the Olympic diving coach, is a firm believer in the importance of a sound base of fundamental springboard techniques and all his champions spend time in preseason training in the sandbox. Mike has the rare ability of being able to tell in the middle of a diver's hurdle whether or not the dive will be a good one. He has made a film entitled *Springboard Techniques* which is a great help to both divers and coaches who realize the value of learning the fundamentals.

The actual construction of the diving sandbox is extremely simple and can be accomplished by anyone. The box itself is nothing more than an enlarged sandbox such as any father might build for his children. In fact, when the diving box which we use at the University of Florida was constructed in the spring of 1950, many people were under the impression that it had been built for the use of the children who participate in the summer swim program which we offer each year.

It is recommended that the size of the box be 18 feet in length and 12 feet in width. The box now in use at the University of Florida was built with two 2 x 12's eighteen feet long and two 2 x 12's which were twelve feet long. The lumber was treated to prevent rotting and angle iron braces were used on the corners to reinforce the nails. A sandbox of this size will give the diver adequate clearance on both sides of the board and will also provide him with stopping room within the box should he land off balance and stumble forward. These dimensions are important because of the safety factor. We must be certain that the box is large enough so that the diver stands little chance of landing outside its area. The diving stand can either be bought or made from iron pipe. It must be kept in mind that the legs of the standard should be long enough so that they can be sunk approximately two feet into the ground and laid in cement. This will make the diving standard more stable and it will not sink if the ground becomes soft or extremely wet. A fulcrum can be attached to the standard although it is not absolutely necessary.

The sandbox is designed specifically for use when practicing the fundamental skills of diving, that is: the approach, the hurdle, and the forward and backward take-offs, There are, of course, what we term the fundamental dives but these will not be considered at this time.

It has often been stated by many swimming coaches and diving champions too, that constant practice of the fundamental skills involved in approaching and hurdling forms the basis of a successful dive. The NCAA rule book says that "all dives requiring a forward take-off shall be executed with a running approach" and that this "run shall be smooth, straight, and forceful and shall comprise not less than three steps before the hurdle."[1]

Our first objective then should be to establish the starting position on the board for all forward running dives. It must be realized that the starting position will differ with each individual diver. A good way to set

[1]National Collegiate Athletic Association. **The Official National Collegiate Athletic Association Swimming Guide, 1953.** New York: The National Collegiate Athletic Bureau, 1953. p. 144.

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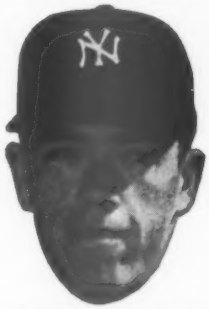

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about establishing this place is for the diver to start at the tip and walk toward the rear of the board, taking three normal steps for his approach and allowing about one step and one-half for the hurdle. Thus, he will be given a spot from which to begin. It now becomes a process of trial and error on the part of the diver.

After a few days of work, the diver will find an approach which feels natural to him and which seems purposeful—neither too fast nor too slow and one in which all motion is straight ahead without sway or wasted motion. This approach, of course, cannot be left completely up to the judgment of the diver but should be accomplished with the advice, help, and final approval of the coach as to the starting and hurdling position. When the starting and hurdling positions are established they should be marked on the diving board in some way so that the diver can perform the start and hurdle at precisely the same spot, dive after dive, day after day. Paint, adhesive tape or nails with large heads may be used. When several divers use the same board different colors of paint may be used to mark their approach or if adhesive tape is preferred, the divers' names may be marked on the tape. Consistency is essential to championship diving. Therefore, every effort should be made on the part of the serious diver to strive for an approach and hurdle which is in good form and does not vary from dive to dive.

A diver's appearance and bearing are under scrutiny from the moment he assumes his starting position. Therefore, the finer details of posture and performance should not be neglected. His body should be held erect and straight with his head up, shoulders back, and arms at the sides. In the front running approach, the stride should be a normal one and the diver's arms and hands should swing at the sides with a smooth controlled motion but not in an exaggerated manner.

When they are working to determine the height and length of the hurdle the diver and coach must be careful that it is neither too long nor too short. Too short a hurdle will often cause the diver to land with the front part of his feet overlapping the end of the board. In the middle of a hurdle which is too short, a diver will automatically lean backward in order to avoid missing the board completely. This backward lean causes him to come down on the board off balance and results in a faulty take-off. Too long and too high a hurdle will throw a diver's timing off and will keep him from making the most effective use of the drop to the board. Usually, the higher a diver hurdles, the higher is his final spring. A word of caution should be added here, for body control should never be sacrificed to gain extreme height. The problem facing the coach as he works with each individual diver is to find a hurdle suited to each man which will give him the maximum amount of spring from his springing leg with a length of hurdle which will result in proper balance and co-ordination throughout.

Proper hurdling is not confined merely to the diver's legs but it is the co-ordinated action of his arms, legs, chest, and shoulders which helps his body lift into the air and gain the needed height. Rather than being thrown wildly into the air, his arms should rise only slightly higher than shoulder level. At the highest point of the hurdle the diver's body should be extended from tip to toe, feet together and toes pointed with arms out to the sides. From this position the diver descends to the end of the board.

JACK RYAN competed at Ohio State in 1942, '43, and '47 and was a member of the All-American team in the 200, 440, and 1500 meter free style events. In 1947 he was a member of the 800 yard relay team that holds the world's record. Ryan is starting his third season at Florida which last year won the Southeastern Conference championship.

As he comes down he may drop his head slightly in order to spot the board, but the rest of his body must remain in a vertical position. During the descent his arms are brought down in a circling motion and when his feet hit the board the diver allows his knees to bend as the board is pressed down by his weight. In order to get the maximum amount of height on the take-off, the diver now co-ordinates his leg spring, arm, and shoulder lift with the up spring of the board. This co-ordinated action is essential for a proper take-off and will be mastered only after months of continuous practice. Springing the board is the easiest and most commonly used method by which a diver can learn to master the technique of timing the spring of his legs with the up spring of the board. The sandbox is particularly useful here for the diver can practice his approach, hurdle, and take-off again and again by doing a series of plain front jumps into the sand. When practicing forward jumps the diver springs into the air, lifting his arms to shoulder or slightly above shoulder height, with his shoulders and chest being lifted at the same time. Stomach muscles should be tightened and pulled in and his body should be stretched from head to toe. On the forward take-off the diver should spring out from four to six feet.

For the backward lift the diver walks to the end of the board, turns to either the left or right, and takes a position so that he is facing the rear of the board. Placing one foot in position at a time, he stands on the balls of his feet with his heels and insteps projecting over and above the end of the board. His arms are raised while his feet are being placed and are brought down to the sides when balance is maintained. To gain the maximum height on the backward lift the diver's arms are lifted up and sidewards and then brought down in a circling motion as he presses down on the board. Now, he must once more time the up spring of the board with the spring of his legs as he co-ordinates simultaneously the lifting of his arms, chest, and shoulders to gain maximum height. Once again, daily practice on back jumps will aid the diver in learning this important skill. On the backward jump a diver should land from three to five feet from the end of the board.

When the forward and backward take-offs can be executed with some degree of skill the diver is ready to practice more difficult dives. Some of the basic dives that can be performed in the sandbox are: Forward and backward jumps, tuck, pike or layout. Forward somersault, tuck or pike. Backward somersault, tuck or pike. Cutaway somersault, tuck or pike. Full gainer, tuck or pike.

When practicing somersault dives it is a good idea to pile the sand high in front of the board so that the diver will learn to complete his somersault well above the board. More stunts and dives can be executed in the sandbox but it is the responsibility of the coach to decide when the individual should attempt the more difficult maneuvers.

The sandbox is the ideal place for teaching fundamentals. However, precautions should be taken to insure making it a safe as well as a useful

(Continued on page 55)

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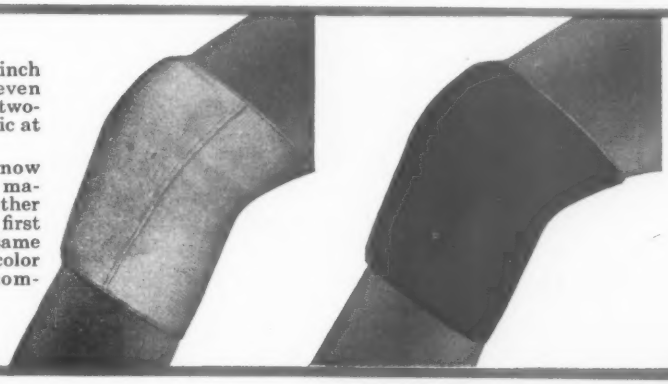

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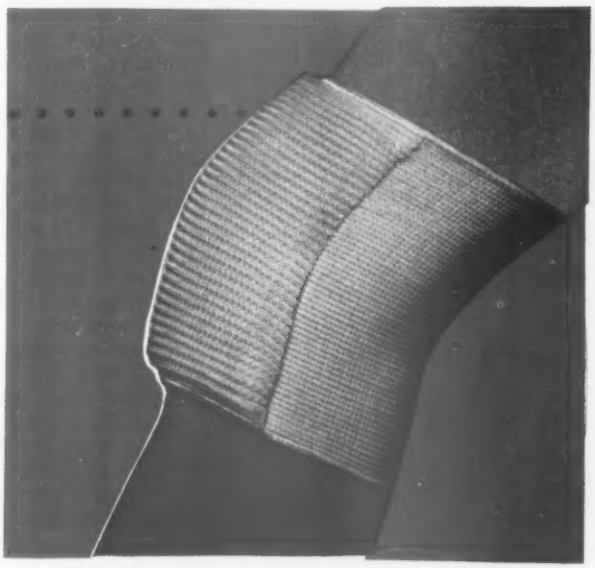

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The 10-Flat Man

(Continued from page 25)

they could forget about breathing technique while running.

Leaving the Blocks

At the sound of the gun, the athlete drives hard against both blocks, and begins the first stride with a normal hand-foot sequence. Actual forward progress is started with a powerful forward movement of the rear leg in a natural, *not chopped,* stride. During this first step the left foot exerts continual force against the front block until the right foot makes contact with the track (Illustration 3). At this point the left foot drives hard off its block in another natural, *not chopped,* stride. Attempting to shorten the first strides is a fundamental error. The movement of both legs, of course, must be accompanied by forceful, compensating arm swings, but this is a natural reflex pattern, and seldom presents a problem. The arm swing is obliquely across the body from a shoulder-high position at the sternum, to a point slightly outside and six inches behind the hips. The hands should be closed loosely, not clenched. The initial arm movements will be more vigorous than during full stride running in order to balance the forceful leg drive.

Concerning the athlete's running form after he is under way, it is suggested that the typical coach seriously consider Bill Hayward's sage advice previously quoted. This famed teacher's instructions to dash men, in regard to sprinting style, were simply: "come out running!" Many other students feel that too much coaching on matters of form—which, after all, cannot be standardized—often results in more harm than good when working with already adequate sprinters.

The finish should be a continuation of the normal, controlled stride pattern, but the athlete must be impressed with the necessity of running through the tape. The number of sprint races that have been won by the second best man who caught his opponent at the finish line, while the latter was cooly looking down at his fingernails, is legion.

In conclusion, a coach should search out the fastest runners in his school, teach them to start and finish effectively, and then if any of them hit 10-flat, just be happy!

Illustration 3 shows the form for the first stride. Notice the downward focus of the sprinter's eyes, his left leg drive, forceful compensating arm swing, controlled body tension, and normal length stride.

Volleyball

(Continued from page 14)

poorest possible chance of providing their spiker with a good set-up. Generally, it is wisest to play the ball deep to the back court or far to the sidelines, thus causing the opponents to use as many passes as possible to get it up front.

There are formations which can be utilized for team play, in certain situations. Here are a few of them:

Of the six men on the team there should be definite spikers and three set-up men. If all of the players were capable of being both spikers and set-up men, a coach would indeed have something. Generally, however, three spikers and three set-up men are all that are required. Insofar as the teams rotate one position clockwise, each time they receive the service anew, each player has an opportunity to play every position on the floor. There will always be at least one spiker up front and at times two. The third designated spiker who may be in the back court becomes a spotter and his job is to feed the set-up men or spikers up front. A rear court man cannot come up to the front line to spike the ball. This is another rule that is often overlooked.

Diagram 1 shows the B team prepared to receive the serve. The front line men are 12 feet from the net; the second line men are 10 feet behind them; and the safety man is 8 feet back of the second line. This alignment presents a strong array for the serve. The front line can easily defend against a short serve, which is dangerous for the server.

The B team has received the serve and has now shifted to offensive position (Diagram 2). Now, the perfect play is the spotter to the set-up man to the spiker for the kill shot.

Diagram 3 shows both team A and team B rotating for a new server, when they win the ball for a serve. Teams rotate clockwise as if both front and rear lines were always straight lines, regardless of how they arrange themselves defensively or offensively.

The perfect play, showing the best area for the spiker to direct his kill shot, is shown in Diagram 4. This shot is most effective when the ball is hit sharply and directly downward.

The situation, which is shown in Diagram 5, demonstrates the need for skill in every phase of the game. Spikers must be able to set-up as well as spike.

Diagrams 4 and 5 show two possibilities of team play. The circled players are spikers.

Diagram 4 shows a spiker, B4, playing a back court position, receiving a ball, and passing to the closest set-up man, B1, who in turn sets up to the only spiker, B2, on the front line. The best possible kill shots are shown by the arrows.

Diagram 5 shows two spikers on the front line, B1 and B3. A back court man, B6, received the ball and cannot get it to the set-up man, B2, in the front line. He passes to the spiker, B3, who sets up cross-court to the other spiker, B1. A cross-court kill and another kill are shown. The drop shot is faking a kill and then placing a soft shot out of reach of either the front or back court men.

There is no doubt that volleyball has appeal. Once exposed to the game, youngsters and adults, male and female, become ardent fans. The idea then is simply to see to it that all get a chance to know the game. Newcomers should not be rushed with technicalities and skills. It is wise to impart knowledge a little at a time. A few rules and the basic fundamentals of passing are enough for a start.

Players should be screened as to ability insofar as possible. The interest of the game can be lost when poorer players cannot keep pace with the better ones, or when a few good players control the game and do not allow poorer players to take an active part.

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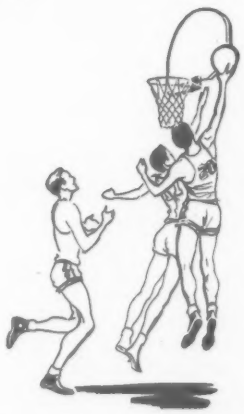

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Trends in the High Jump

(Continued from page 7)

serve as even more pronounced examples.

Following are the divisions, as we see them, with the names of a few of the better known exponents of the particular style:

Orthodox Straddle Style — Dave Albritton, Les Steers, and J. Lewis Hall.

Dive Straddle — Gil Cruter, Ken Wiesner, and Ernie Shelton.

Orthodox Western Roll — Harold Osborn, Corny Johnson, and Arnold Betton.

Dive Western — Mel Walker, Walt Davis, and Milt Mead.

The value of appreciating the fundamental differences in crossbar clearance is clearly shown by hundreds of jumpers, but let us take Walter Davis and Dave Albritton as well-known examples.

Walter Davis, for instance, would probably not be a world record holder today had Frank Anderson, his coach, tried to pattern his style after Harold Osborn's Western roll. With Davis' height and other capabilities, the dive Western roll was much more practical for him. It was also fortunate that Larry Snyder was quick to see the aptitude that Dave Albritton had for the straddle, for had Albritton stayed with the Western roll he might never have set his world mark.

Understanding the variations within the two accepted orthodox styles, Western and straddle, can be just as important. For J. Lewis Hall to straddle as does Ernie Shelton, or for Milt Mead to Western as does Arnold Betton, would be just as serious a mistake as having all shot putters use the style of James Fuchs. Different reaction times, body structures, mental approaches, and athletic backgrounds dictate different form. Hall, Mead, Shelton, and all of the other champions have learned to capitalize on the qualities they do have.

At the 1953 NCAA Meet in Lincoln, Nebraska, last June, the division of styles was very much in evidence. Along with several very fine exponents of the orthodox Western roll, Milt Mead of Michigan stood out in contrast with his diving Western. J. Lewis Hall of Florida and Mark Smith of Wayne, with their orthodox straddle styles, were in direct contrast to Ernie Shelton of Southern California who used the diving straddle. From a satisfactory asphalt take-off on a hot day, one of the greatest high jump contests in college history took place as Mead, Smith, and Hall tied for first at 6 feet, 8¼ inches, with Shelton close behind, in the battle of styles.

As the crossbar moved up and up, it became quite evident why each man used the style he did. Shelton, with his lack of power and speed in the run, had developed a dive with his straddle to get the most out of his height. Mead, due to his inability to co-ordinate a strong and straight lead leg, compensated for his low center of gravity with a dive Western. Hall and Smith, two well-co-ordinated all-around athletes, used rapid approaches, high centers of gravity, and remarkable body mechanics over the bar to demonstrate the orthodox straddle style. For the first time in several years, however, standard Western roll jumpers such as Eddleman or Betton were not in the competition at the high heights.

We could not help wondering as we watched this great jumping contest what Mead's potential would be had he been able to use his lead leg as Hall did; or what Shelton's limit would be if he had an approach like Smith's; or who could ever beat Hall and Smith if they could attain their high centers of gravity and still wrap around the bar as Sheldon did. No doubt, these questions had been asked before, and each man had probably tried and discarded, as not practical for him, what we felt would be refinements in form. Shelton, for instance, might never have had time to get into his beautiful tuck position at the top of his jump with a faster diving approach; Mead, because of his height and lack of great co-ordination, had found that diving was the type of jump he could employ the best.

Probably the most satisfactory method of presenting a clear explanation of how and why the straddle jumps differ is to study the accompanying illustrations of Shelton and J. Lewis Hall which were taken at the NCAA Meet at Lincoln, Nebraska. The second part of this article which will appear in the *March issue* will deal with the division within the Western roll.

While Shelton finished behind Mead, Hall, and Smith at the NCAA Meet, he is probably the best college jumper to appear in many years. On a tour of Scandinavia last summer, he averaged better than 6 feet, 7 inches in more than 15 meets, and had one jump of better than 6 feet, 10 inches earlier in the tour. Hall, of course, is well known as the NCAA champion of 1951 and a fine, all-around athlete at the University of Florida. Both men employ what is generally regarded as the straddle style, yet their basic principles of crossbar clearance are quite different, as the illustrations show. These men are two fine present-day examples of the orthodox straddle style and the dive straddle.

In discussing the straddle styles of crossbar clearance, we must first determine the basic phases of the forms. They are: 1) Approach and foot plant. 2) Leg swing and take-off. 3) Body mechanics over the bar.

Now, we will point out the most prevalent technique used by the world's best jumpers for each phase. Theory will be avoided as much as possible and we will try not to be arbitrary.

Approach and Foot Plant

While Albritton used more than ten strides to the bar on many occasions, and Shelton in 1953 used only four, the average number of strides taken by most good jumpers is six or seven, with the only check mark being at the start of the run. The speed of the run for straddle jumpers also varies from practically a walk up by Shelton to a fast-driving approach by Wiesner and others. Yet, without exception, the last three strides for all jumpers are longer and at an increased speed. In the angle of the approach we notice the same type of variation. Jumpers have had success from 30° to almost an 80° angle, but the average angle of approach is closer to 40° to the bar.

The final phase of the approach is the foot plant, and our motion pictures of at least 50 of the nation's better jumpers of the last fifteen years show remarkable uniformity in this respect. Without exception, the straddle jumper's foot is planted at very close to a right angle to the bar. This is due, no doubt, to the fact that almost never does one see a straddle jumper who is not starting to turn toward the bar before his take-off foot is planted. In order to keep his weight traveling over his toes during the take-off, his foot is also turned off the line of run to the left. In recent years, the planting of the foot at almost a right angle has become a widely accepted coaching practice; however, a wise athlete will continue to concentrate on not turning toward the bar until his takeoff foot leaves the ground.

Leg Swing and Take-Off

Gil Cruter, who jumped 6 feet, 8¾ inches, Albritton, and many others used practically no swing of the free

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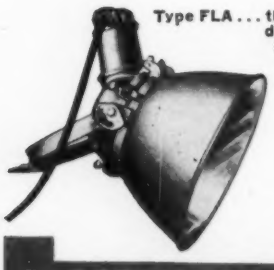

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leg at all; however, Steers, Wiesner, Shelton, and others used it as a pendulum. The consensus of opinion on leg swing is that a semi-straight leg kicked away from the line of run (almost parallel to the bar) is most satisfactory. However, many athletes who jump the dive straddle have a great deal of difficulty co-ordinating their body tuck (inverted V position on top of the bar) with a semi-straight leg. Shelton and Wiesner, the most recent of the successful dive jumpers, seem to have no difficulty in using strong semi-straight lead legs.

With very few exceptions, coaches and authors of track books go to extreme in emphasizing that at the take-off the jumper's body must rise vertically with no leaning toward the bar. After observing literally hundreds of straddle jumpers, we have yet to see one who does not lean both toward the bar and off to the side. In some great dive jumpers like Wiesner and Cruter, and straight straddle jumpers like Albritton and Mark Smith, the lean is excessive. The conclusion to be drawn is not that leaning is an asset, but that it may be impossible to convert a perfect vertical take-off (such as Osborn used with his Western roll) into a stomach lay-out necessary for straddle jumping. Leaning may be necessary.

The factor which seems constant, in all great jumpers, is that the weight usually passes over the take-off foot even though the jumper's head and shoulders may be leaning in anticipation of lay-out. Then the actual center of gravity is over the take-off foot, despite the fact that the trunk is not erect. In short, it is not necessary to have an erect body to keep the center of gravity over the take-off foot. Albritton, Wiesner, Hall, and others too numerous to mention, while leaning to get position for lay-out, manage to bring their center of gravity up over the take-off foot in time to get fine upward drive from the take-off leg. The conclusion then on straddle body lean at the take-off seems to be that the center of gravity remaining over the take-off foot is the key to an efficient take-off. Erect body position with no lean or turn is probably impossible for straddle jumpers, but keeping the weight over the foot, even with a corkscrew take-off such as Hall uses, is not only possible but essential.

While the orthodox straddle jumper attempts to drive his chest as high from the ground as possible, the dive straddle jumper concentrates on getting his head and chest down on the other side of the bar as quickly as possible. For this reason, we find dive straddle jumpers leaning in more at take-off and thus getting less apparent power from the take-off leg. Exponents of this style are willing to sacrifice some original lift for what they feel is vastly more economical position when the bar is cleared.

Body Mechanics Over the Bar

We have seen that the two straddle styles are the most efficient. Heretofore they have been limited mainly by the inability of any athlete to incorporate the power of the vertical take-off (often possible in the Western roll) with the efficiency of clearance the form provides. In spite of take-off complications the straddle styles still seem to hold their own in popularity.

In the orthodox straddle the jumper drives his head, shoulders, and chest well above the bar, and then while dropping the right side of his body toward the pit he rotates his head and hips to assist in clearing the bar with the left side of his body. Lifting of the entire left leg or frog kicking it while turning the toes up, turning the head back to the direction of run, and simultaneously rotating the hips help second leg clearance.

The dive straddle as employed by Cruter, Wiesner, and Shelton differs from the straight straddle in two ways. The jumper's head and shoulders lead the jump from take-off to landing. They are not driven so high — in fact, usually just high enough to clear the bar. As soon as they have cleared the bar they start down, arching the back and putting the jumper into an inverted V at the height of the jump. The basic difference in the styles is most evident just over the bar. A straight straddle jumper is in a semi-jackknife position which allows a lower center of gravity at the top of his jump. The second leg clearance is usually accomplished by a lifting action rather than by hip and foot rotation, because the early dropping of the jumper's head and shoulders greatly assists second leg clearance.

The conclusion which might be reached concerning the two styles, when studying pictures, is that the dive straddle is the most practical, particularly since Wiesner and Shelton, two of the best jumpers in the world, use it. It must be pointed out, however, that while these two men with their remarkable timing and ability to control their hip tuck at just the right time look tremendously efficient, this does not mean that even well-co-ordinated straddle jumpers like J. Lewis Hall and Mark Smith are suited to the style. Only after much experimentation may a boy and his coach determine which style is the one for the athlete to use. After all, two of our all-time greats, Albritton and Steers, jumped the straddle without a dive.

One thing is quite evident, however, to those of us who watched Ken Wiesner's jumping on the boards last winter and Ernie Shelton's remarkable exhibition on our European tour last summer. These two men have (knowingly or not) incorporated the good features of the old barrel roll as used by Gil Cruter with the standard advantages of the straddle, as used by men like Steers, into a style which now must be considered an accepted and efficient form of crossbar clearance.

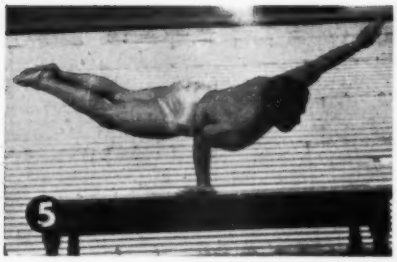
Singles Balancing

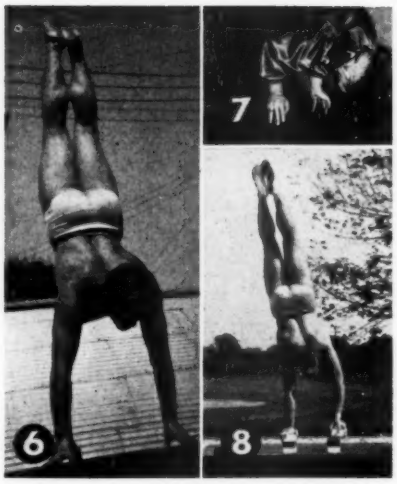
(Continued from page 16)

feels he is pretty well balanced, he should lift his left arm off the floor and extend it as shown in the illustration. Performers should not become discouraged if they cannot do this stunt on their first try. Anything worth-while requires work and practice.

Handstand on finger tips. This stunt is shown in Illustration 6. The major portion of the performer's body weight should be supported by his thumbs which are almost vertical. His fingers should be well spread, and his body should be held in a slightly underbalanced position. The handstand can also be done on four, three, two, or one finger of each hand. The incomparable Bob Jones did the finger balance on ten Indian clubs knocking them down one at a time, while retaining his balance to finish balanced on his thumbs on only two Indian clubs. No one has ever done a one finger balance without gloves and a gimmick.

The Michaels. This headstand on Coca Cola bottles is shown in Illustration 7. It is named after its originator, Freddie Michaels, a professional acrobat from Youngstown, Ohio. It will be noticed that Freddie is in a greatly underbalanced position in order to place the major portion of his body





AFTER graduating from Illinois where he was a member of the famed Gymkana Troupe, James Baley organized and coached the Duke University gym teams. He left Duke in 1949 to complete work for a doctor's degree at Ohio State and since then has been on the staff at Ohio Wesleyan.

weight upon his hands to avoid pushing a hole into his head. It is recommended that a performer have at least two alert spotters stand alongside while he learns this stunt.

Handstand on blocks. This stunt is shown in Illustration 8. It will first be necessary to cut a sanded 2 x 4 board into 8 to 12 inch lengths. A performer should make himself at least eight of these blocks. They should be stacked into two stacks, each stack four blocks high. The performer should upend into the handstand either by pressing or kicking up. Then he proceeds to remove one block at a time from alternate sides until he reaches floor level. It will be noticed that the performer's right arm, which was the supporting arm at the time the picture was taken, is perpendicular to the table. It is necessary, of course, for him to shift his body weight to his right arm and to hold a balance on this one arm momentarily while removing a block with his left hand. The same is true in reverse when removing a block with his right hand. His body weight should be shifted by tilting his body on his shoulder with his arm held perpendicular. Failure can result only if his arm is shifted out of the horizontal position.

We realize coaches have many and varied responsibilities and that their services to larger groups of boys will prohibit them from spending time with the few boys who will be interested in balancing. Nevertheless, these boys deserve consideration also. After the boys have developed a reasonable degree of skill they can serve the coach, the general student body, the public, and themselves by providing half-time entertainment and by entertaining at all sorts of social gatherings such as assembly programs, conventions, and dinners. Everyone will have fun and more boys will benefit from participation in an athletic program.

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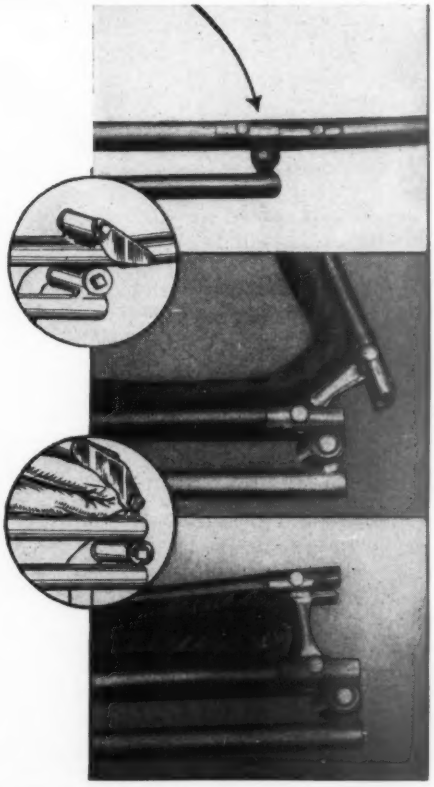

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From Here and There

(Continued from page 4)

State in the 1931 Rose Bowl game. Penn State averaged 29.7 players per game last fall under so-called one platoon football which is almost identical with the previous year under two platoon rules. The low point was 25 players in the Pennsylvania game . . . Next summer Santa Barbara College will move to a new campus now being built in Goleta, California seven miles from Santa Barbara . . . "Willie" Wilton, Santa Barbara basketball coach, was more famous for his football than basketball exploits as an undergraduate at UCLA. In a game against Washington State he kicked 14 times for an average of 57.5 yards a kick . . . It seems that a few seasons ago Blair Cherry, former Texas coach, had psychologically raised his squad to an emotional pitch on numerous occasions during the season and was faced with finding a new approach for the Cotton Bowl game with Georgia. Gathering the players about him in the dressing room, he read off the Georgia roster with emphasis upon the boys' home states. After mentioning a number of different states he said: "Gentlemen, today it's Texas against the world."

Infield and Outfield

(Continued from page 18)

rect fundamental throwing and fielding techniques. When the pepper games are finished the squad is ready for its defensive drills.

Every squad should take defensive infield work, with the coach hitting ground balls, and the boys practicing their throws and judging the bounces. There is no one pattern for such infield work but each team should know its own set pattern and stick to it. Every infielder should know where the ball is to be thrown next so that the drill will go as smoothly as possible. There should be no guessing game going on as to where the first baseman or catcher is to throw next. Such guesses result in wild throws, uncovered bases, wasted time, and a loss of confidence.

It does not matter what the pattern is as long as the boys adhere to it. The coach should decide on the pattern of throws, take the time to teach it to the team, and then follow it religiously. Much time will be saved and the workout will run smoother as a result of this planning.

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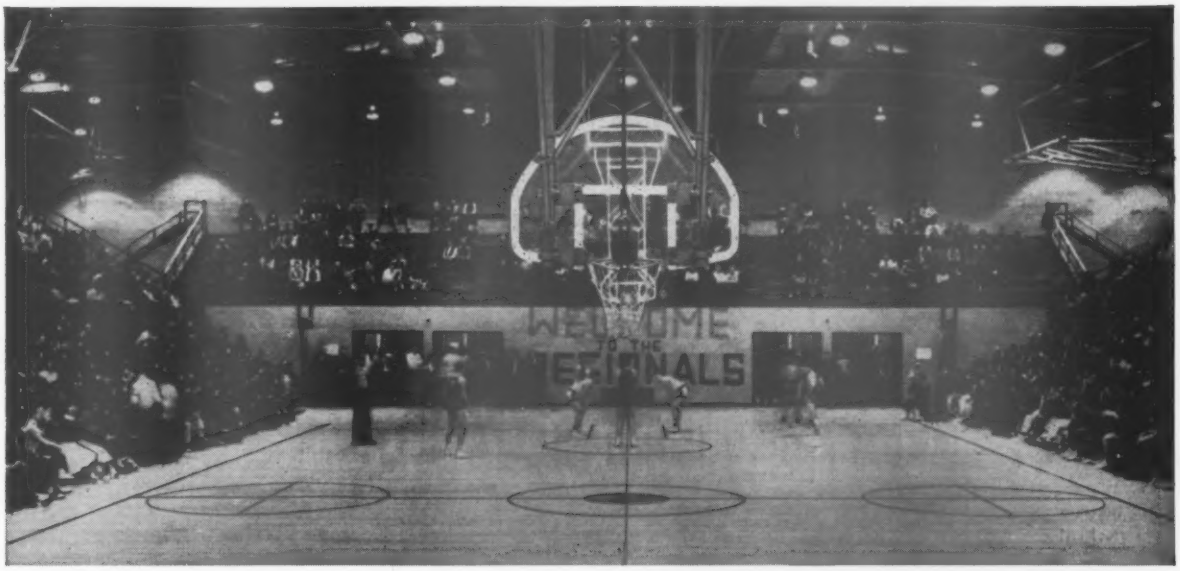

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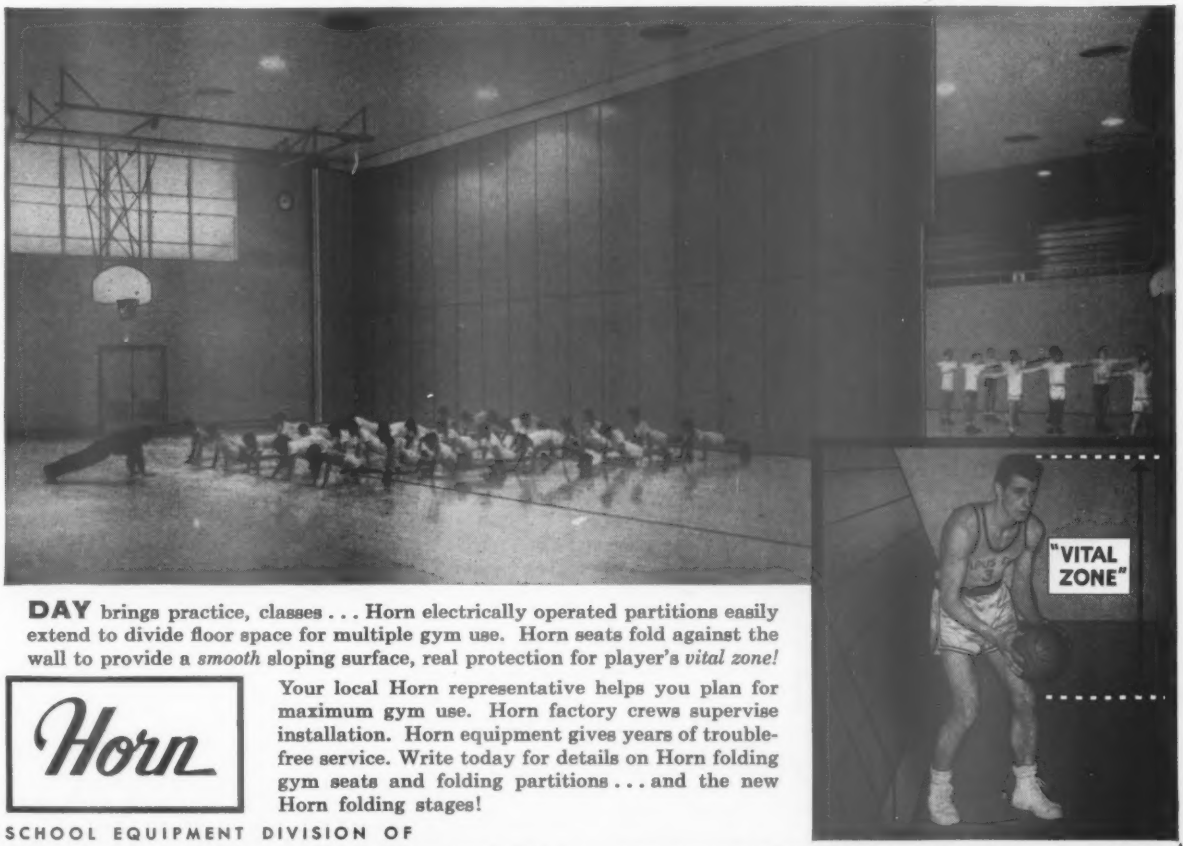

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Another group which requires special defensive training consists of the pitcher, first baseman, and second baseman. This trio is concerned with ground balls and bunts to the right side of the pitcher's mound. The pitcher must try to field every ball that he can. If he cannot field the ball, he should continue toward first to take the throw if the first baseman is pulled off in trying to field the ball. He veers away if the first baseman is covering the bag, and continues if the bag is not covered. With a man on first and the bunt expected, the second baseman must be ready to cover first while the pitcher and first baseman converge on the batter to field the bunt as quickly as possible. The catcher aids on the bunt play by shouting to the pitcher or first baseman the base to which the ball should be thrown. This play should be practiced thoroughly because it comes up often and can lead to much grief and many runs if improperly played.

The pitcher and the first baseman must be drilled to support the catcher on plays at home plate from the outfield or deep in the infield. On throws coming from the left field area the pitcher should take the cut-off spot about 40 or 50 feet from the plate and in line with the throw. He serves as a target for the outfielders' low throw and as a cut-off man if the catcher shouts "cut it." The first baseman on the play moves down the line behind the catcher to back him up. The points to stress are these:

1. The pitcher must get to the cut-off spot in a hurry. He must not cut the throw unless the catcher tells him to do so.

2. The catcher must judge the speed of the ball and the runner. If no play can be made at home, he should shout "cut it."

3. The first baseman must not get too close behind the catcher; otherwise a ball which bounces high over the catcher or scoots through him will also evade the backer-up and go through to the wire.

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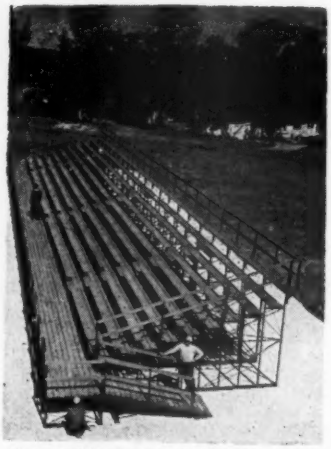

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field area, the first baseman takes the cut-off spot, while the pitcher backs up the catcher. The rules are the same as stated previously.

The basic outfield drill is fungo fly-catching and unless preventive measures are taken this drill will deteriorate into the most useless waste of time to be found. Any average boy can loaf over under a "tall can-a-corn" and make a catch, so it is best to have few high fly balls hit. The outfield must be drilled on high-hopping ground balls, low-sinking liners, and other equally hard-to-judge balls. When the outfield is having fielding practice it is a good idea to have the fielders form a group or a line well back of the fielding area. Only one fielder at a time goes forward and he must field the ball regardless of where it is hit. The hitter should hit to the right, to the left, in front of or over the fielder, seldom directly to him.

Time must be spent on outfield throwing drills if the best results are to be obtained. All throws from the outfield must be kept low so that they can be fielded quickly and well. On long base hits or deep put-outs the fielder must be drilled to throw to the relay man. This man will be the shortstop on the left field side and the second baseman on the right field side. The outfielders must also shift over to help one another relay the ball to the nearest infielder.

On plays which result in a throw being made to home plate from the outfield, the fielder must be coached to get the ball before he tries to throw it. He must pick out the catcher and the cut-off man, making a straight overhand throw, low so that it will skip once into the catcher's mitt. Throws of this type should be practiced often but not for very long at a time.

A good team defensive workout to check on the progress of these individual plays can be worked by placing the nine men in positions and using the rest of the squad as base-runners. The coach stands at the plate with a fungo and hits the ball where he wants it, bringing up whatever play he desires. During this drill which closely simulates game conditions the position of players on each play should be closely checked to assure that they are at the proper place. Backing up all throws, throwing to the relay man, and covering the bases should be stressed during such sessions.

In summary the following points should be remembered:

1. The key defensive infield positions are at shortstop and second base. These positions bolster the strong middle, beginning with the catcher and the pitcher.

2. If power is needed in the infield, it should be added at third or first, never at second or shortstop.

3. The strongest defensive outfielder should be played in center field. Power in the outfield may be added in right and left.

4. The bunt situation must be drilled on often if the team is to cope successfully with it in the games. Players' responsibilities must be definite and the coach must insist that they be carried out quickly.

5. The outfield should be drilled on the hard-to-field hits rather than on easy fly balls. Throws from the outfield are kept low and on long hits the ball must be thrown to the relay man.

6. All throws must be backed up. The outfield moves to back up throws from the catcher to the bases, and the pitcher and infielders back up throws from the outfield and other infielders.

With these essentials and his own ingenuity, it is hoped the coach can do much to improve his team's defense in the coming season.

Skills in Diving

(Continued from page 40)

teaching aid. It is essential that spotters be posted on each side when a beginner is learning to spring the board. Belts should be used when the diver is learning to somersault, and when the belt is not necessary, spotters should be handy to prevent the diver from falling backward into the board. It is also wise to place the sandbox and board in an area where the activity can be supervised, for indiscriminate use of the apparatus could result in serious injury. Proper use of the diving sandbox should result in the correction of faulty techniques on the springboard, and with a sound knowledge of fundamental skills, plus the courage and perseverance which are always necessary, the young diver should be well on his way to becoming a top-flight performer.

Santee's Stride

(Continued from page 10)

better with a longer, relaxed stride, the common form among most distance runners. We, of course, disagree and point out the fine record Wes has made in all of the various distances he has run.

Santee is 21 years old, 6 feet, 1 inch tall, and weighs about 150 pounds when he is in condition. He has run remarkably well in each of the following events: 47.9 in a third lap on

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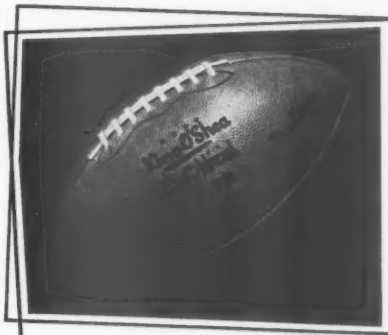

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the winning mile relay team at the Drake Relays last spring; 1:50.8 in winning the 1953 Big Seven Outdoor half-mile championship and setting a new record; 4:02.4 for a new American mile mark at the 1953 Compton Relays; 10:43.5 in winning the National Collegiate Cross Country Championship last fall at East Lansing; 5000 meters in running second behind Curtis Stone in 14:32.0, a new school record (1952 Olympic trial finals).

Since he covers approximately 6 feet, 4 inches to 6 feet, 6 inches with each normal pace stride in running the mile, Santee's stride is very deceiving. Of course, his stride is lengthened in a quarter-mile race and in the shorter 220 or 100 yard dashes. His 220 time, 22.5, indicates tremendous speed and the length of his stride covers approximately 7 feet. Wes is tall and has long legs; consequently, the illusion of a short stride is given to all who watch him.

Another interesting accomplishment of Santee's is his ability to change pace at any given moment in a race. He has excellent relaxation, even at high speed and a fine background of hard work in over-distance. These factors, plus a terrific determination, have made it easy for him to change pace and move into a fast over-drive at any designated spot in each of his races.

The accompanying illustrations show Wes coming into the three-quarters post in his record-breaking mile (4:03.7) in the NCAA Meet last June at Lincoln, Nebraska. A particularly fine competitive mile field lined up on the track at the start of this race. Santee was fourth from the outside in a very crowded field and was unable to get out of the pack until the start of the second lap. It is also interesting to note that the quarter was fast, 59 seconds, with the pace set by Benny Wilson of San Diego State. Carl Joyce of Georgetown was in second place, in third place was Tom Monfore of Wisconsin, and Santee was in fourth position. The 660 time was 1:31.2 and the 880 time was 2:03.8, with Joyce and LaPierre of Georgetown in first and second places, followed closely by Santee, Fred Dwyer, Villanova's great miler, and Leonard Simpson of California. As they came off the curve into the back stretch, Santee took over, stepping up the pace to 3:03.6 for the three-quarters, followed by Dwyer and LaPierre, and finishing the mile with a :60.1 last quarter for a time of 4:03.7. He was followed by Dwyer, 25 yards, in 4:07.1 who also broke the old record. Simpson was third, 10 yards, followed closely by LaPierre of Georgetown, Robins of Marquette, and Russ Bonham of Whittier College. It was a very fine race as the quarters will show: :59, :64.8, :59.8, and :60.1. The time for the first half was 2:03.8 and for the second half 1:59.9. These times indicate the change of pace that took place in the race and the fine milers who were pushing the champion to a new record.

Stride is a very interesting thing to talk about, but in many cases it is difficult to analyze. We prefer to look at the runner in question and discuss him as he works. It is our

BILL EASTON began coaching in Indiana high schools, moving to Drake in 1941 where he served until 1947 when he moved to his present location. Bill Easton's 1952 relay teams scored one of the greatest triumphs in track when they broke the Drake Relay records in the four mile, distance medley and mile relays. Wes Santee is one of a long line of outstanding distance runners who have been coached by Easton.

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feeling that Santee's stride was made for him and cannot be copied by too many boys in distance running. Wes has great native speed and wonderful ability to relax; he has a strong body and particularly a strong upper shoulder girdle, with a good knee lift propelled by a terrific drive off the ball of his foot. A great deal has been said about this latter item and it will be noticed from the illustrations that Wes comes through with a quick knee drive that stems from a foot set and drive off the toe-heel rocker action of running. His conquering of this particular type of running helped him tremendously in putting into action the speed and strength attained from hard work. The perfect co-ordination between ankle, foot, and knee finds the runner bringing his toe down to the cinders first, setting it firmly, then dropping his heel lightly to the ground and rocking through with a terrific drive off the ball of his foot. This action brings his knee forward rapidly and sets it up to go through the drive action once again.

One of the most interesting things about Santee's stride is the perfect co-ordination of his upper shoulder girdle. Wes does not bring his arms through the long arc, as the normal distance runners do, but brings them through to the rear only partially. Then he brings his arms forward with a rapid swing and a definite pull into his backward arc. This sprinter action is also carried out in approximately the same way with his knee action and back kick. We find a comparatively high knee action and a very definite kick to the rear but not to the extreme that most distance runners lift their heels. Thus, his knee comes forward faster, and he is able to place his foot rapidly on the ground again.

One of the most important points that should not be overlooked in any article written about Wes Santee is his terrific urge to do a fine job. His deep-rooted faith in his own ability to accomplish his goal and his overall co-operation as a team man first, and an individual second, marks him as a rare individual.

Wes Santee has not run his best race and may not do so for another year, but he is fast approaching the level where any mile race in or around 4:08 is commonplace for him. We believe being able to run at this level of speed at any time brings him closer to the day when the perfect condition of a fast track, excellent weather, top competition, and the great American crowd to urge him on, that mythical and elusive *four minute mile* may become a reality for Wes Santee.

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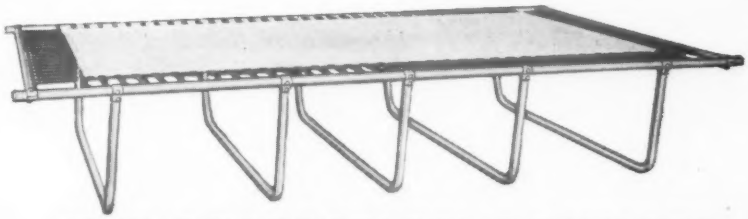

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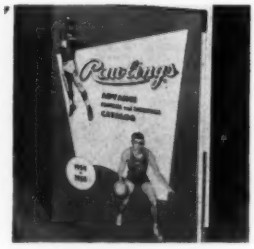


THE new Rawlings *Advance Football and Basketball Catalog* features a new size and more pages. Featured in this always popular catalog is Rawlings recently introduced "Head Cushion" line of football helmets. These new helmets feature a colored Tenite plastic shell, Aire-Guard Vinyl padded suspensions, and a new padded chin strap. Also included is the new line of "Fleetfoot" football shoes and the new line of shoulder pads with "Double-Contour" fibers. Use the Service Coupon or write Rawlings Sporting Goods Co., 2307 Lucas St., St. Louis 3, Mo.

HERE is the newest basketball to come on the sports scene. It is the Voit XB20 which is similar to the CB2 only it is brightly colored yellow. The yellow ball was manufactured at the request of numerous coaches who felt the bright color enabled the players and spectators to follow it better. "Protector Kote" protects the outer surface of the ball from checking and weathering caused by heat, sun, oxygen, and ozone and resists scratching and scuffing. Voit Rubber Corp., 1600 East 25th St., Los Angeles 11, Calif.

OF interest to the many readers of this magazine who handle Little League Baseball is the announcement of the latest rules which state that each player must wear an athletic supporter. Johnson and Johnson answered the call by taking their world-famous "Coach" supporter and redesigning it in order to fit waist measurements from 20 to 26 inches. The supporter is called "Coach-Little Leaguer" and is identical with the "Coach" except for the smaller waist measurements. Johnson and Johnson, Elastic Goods Division, New Brunswick, N. J.

THE newest baseball glove on the market is this new G117 "Gus Bell" fielders' glove which the MacGregor Company has introduced for the 1954 season. It is a large finger model glove of selected heavyweight leather and is fully lined with leather. There is a large one-piece leather tunnel web, full welted throughout and it has a laced wrist. The manufacturers have built the utmost in durability and flexibility into the glove. MacGregor Co., 4861 Spring Grove Ave., Cincinnati 32, Ohio.

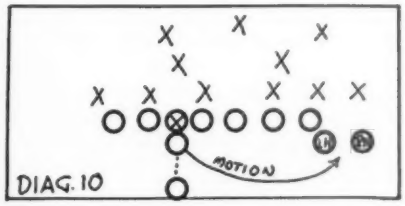
Split T

(Continued from page 20)

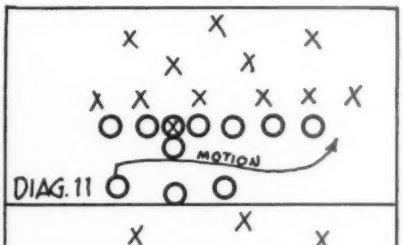
is shown in Diagrams 14, 15, 16, and 17. Again, the defense must shift to meet the strength of the play.

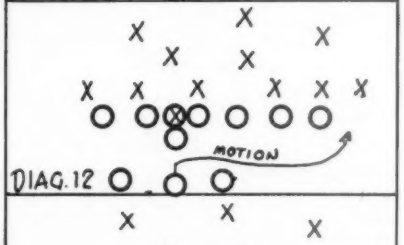
Diagrams 18 and 19 show a winged man-in-motion in a pass pattern, while Diagram 20 simulates the double wingback system with two tailbacks.

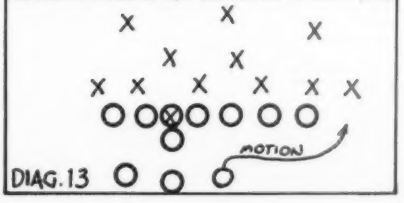
The important factors of the unbalanced line split T are: 1) It will force the defense to be alert at all times. 2) The defense will be required to commit itself as to whether it will meet the offensive linemen head-on or in the seams. 3) Each of the 20 basic variations is conducive to the development of a large number of

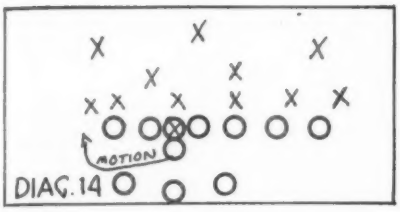


running and passing plays. 4) The offensive line can be unbalanced to the left as well as to the right, and all plays and passes may be executed in both directions. 5) Usually, the offensive blocking angles are good. 6) Due to the expanded offensive area of the holes the ball-carriers have more opportunities for maneuvering and manipulation. 7) The linemen can take their positions in a tight forma-



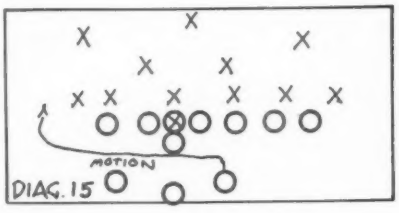






tion and shift to a split alignment, or they can come from the huddle and go into a split formation and shift into a tight forward wall. 9) On certain running plays and forward passes the ends can be stationed as wide as is called for by the occasion.

A great number of coaches ponder for hours over the problem of meeting shifting defenses. Experimentation with established offensive systems — the split T in this case — will put the burden of worrying on the defensive coach as he prepares to meet



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NO more cold weather or rain troubles for coach Gilman Hertz who now trains his Northern Illinois State Teachers College track team on the Indoor Track Trainer. The machine consists of a running platform 12 feet long and 24 inches wide, placed 18 inches from the floor. A flat rubber belt on which a white center stripe is painted runs over a flat metal plate. The trainer is powered by a variable speed motor. Barber-Greene Co., 400 N. Highland Ave., Aurora, Ill.

BUTWIN's have come out with a new, outstanding football cape. It is made of a new type of low temperature plastic that is not affected by either heat or cold. All of the seams are vulcanized or heat-sealed, making it entirely waterproof. It has inside hand pockets to keep the garment closed tightly and is made of a non-glare plastic, reinforced at all points of strain. The oversize hood permits use over the helmet. Butwin Sportswear Co., Finch Bldg., St. Paul 1, Minn.

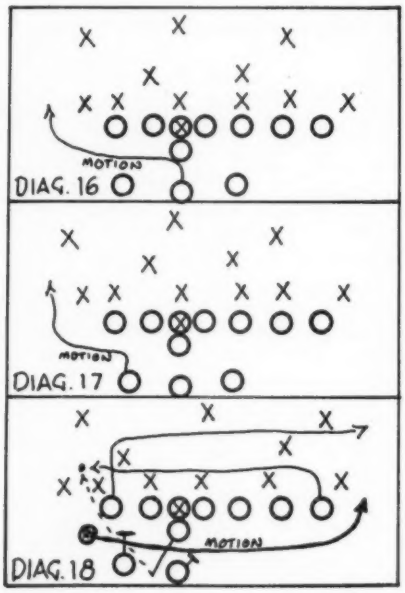
ONE of the finest coaching aids to come across our desk in sometime is this *Harvard Table Tennis Teacher*. The booklet contains 16 pages and includes action shots and drawings of the proper method of gripping the paddle, proper footwork, and the basic strokes such as the half-volley, backhand chop, forehand drive, backhand chop, backhand drive, drop shot, and backhand flick. The laws of table tennis and suggestions for conducting a table tennis tournament are also included. Free. Julian Brightman Co., 702 Beacon St., Boston 15, Mass.

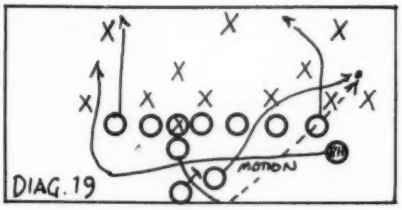
THE Decathlon Kit has many decided advantages to the track coach. To mention a few — it helps in selecting the right man for the right event, is a conditioner for the early season, an excellent incentive for improvement, discovers unsuspected and hidden abilities, and is a terrific interest builder. The twelve events include the usual field events plus the hop, step and jump, the two dashes, 70-yard high hurdles, 120-yard low hurdles, and the 660-yard run. All necessary material for $1.50. Vince Reel, Box 659, Garden Grove, Calif.

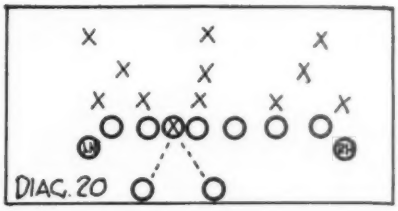
ONE of the most imaginative games to come out in sometime is "Smash" which combines the skill of handball, squash, and table tennis. The equipment consists of table tennis bats and balls, a "smash" board, and court lines painted or taped on the floor. A minimum of space is required — 12′ x 20′ with a 7′ ceiling is ample. Singles or doubles may be played and the game must be seen to be appreciated. For full particulars write "Smash," 4700 Woodland Ave., Western Springs, Ill.

a team that has a flexible offensive system.

It is hoped that the idea of the unbalanced line split T will stimulate all coaches, regardless of what offensive systems they employ, to attempt to make developments that will enable the game of football to improve steadily until greater accomplishment has been reached.







First 190 Foot Throw

(Continued from page 9)

landed about ten feet to the right of center.

Illustrations 17 and 18 show the actual release and follow-through. His entire weight is over his left leg and his right leg has started to pull around with his hips. His head has also taken part in the thrust to the left.

Illustrations 19 and 20 show that Iness has pushed off so hard and followed through so far with his arms, shoulders, and hips that it has thrown him to the left and is pulling his right leg around. Iness does not change feet at the end of his throw as some discus throwers do. The reason for this is that he does not have room in the ring to do so and we found that he had a tendency to leave his feet too soon thus reversing before he had completed his throw.

In conclusion, it would appear that Iness has used his tremendous shoulder strength and long arms to the best advantage possible to make up for his lack of speed and leg strength. Hours of hard work on his turn, concentration on his timing, and a will to break the accepted world record finally paid off for him. There is nothing that will take the place of hours of work and many throws.

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Meeting the Challenge

NEAR the top of the list of problems confronting us as a people is what to do about our schools. More and better facilities are needed and more adequate salary scales are required for the personnel connected with the schools.

The problem is more acute when it is realized that while education requires a major portion of the local tax dollar, other city and local expenses have risen also. Couple the local tax bill with the ever-increasing federal tax burden and it is readily understood why there is a growing resentment against increasing taxes.

In many instances the schools have been at fault in not selling themselves and their needs to the community. In other instances the city officials have erroneously followed the belief that if conditions become serious enough, the federal or state governments will step in and through the means of grants the problem will be solved.

It is not our purpose in this editorial to tell school men that a serious situation exists, for everyone connected with education is not only cognizant of the fact, but is worried about the outcome. Rather, we wish to point out what the city of Columbus, Indiana did to help solve the problem.

Before beginning it would be well to state that Columbus is a community of average size with a population of 18,000, located in a farming area and possessing the usual number of small industries. Since the war the people of Columbus built themselves a new grade school and a new high school which were paid for through tax levies. Nothing new so far, but the townspeople decided they needed a new high school gymnasium and here is the departure from the ordinary.

The citizens first decided that they wanted a free hand in building the gymnasium they wanted. They also agreed that they wanted the gym immediately and not several years hence. These two decisions eliminated the Federal Security Agency, although the community probably could have obtained assistance due to its proximity to a major military establishment.

The people decided on a voluntary campaign to raise $750,000. The entire drive became a community project and business and industrial firms contributed $425,000. Volunteer workers gave themselves two weeks to raise the balance by popular subscription. They not only met that deadline, but oversubscribed the fund for a total of $925,000.

Columbus has its gym but what is more important is the feeling of satisfaction on the part of its citizens that the community can stand on its own two feet.

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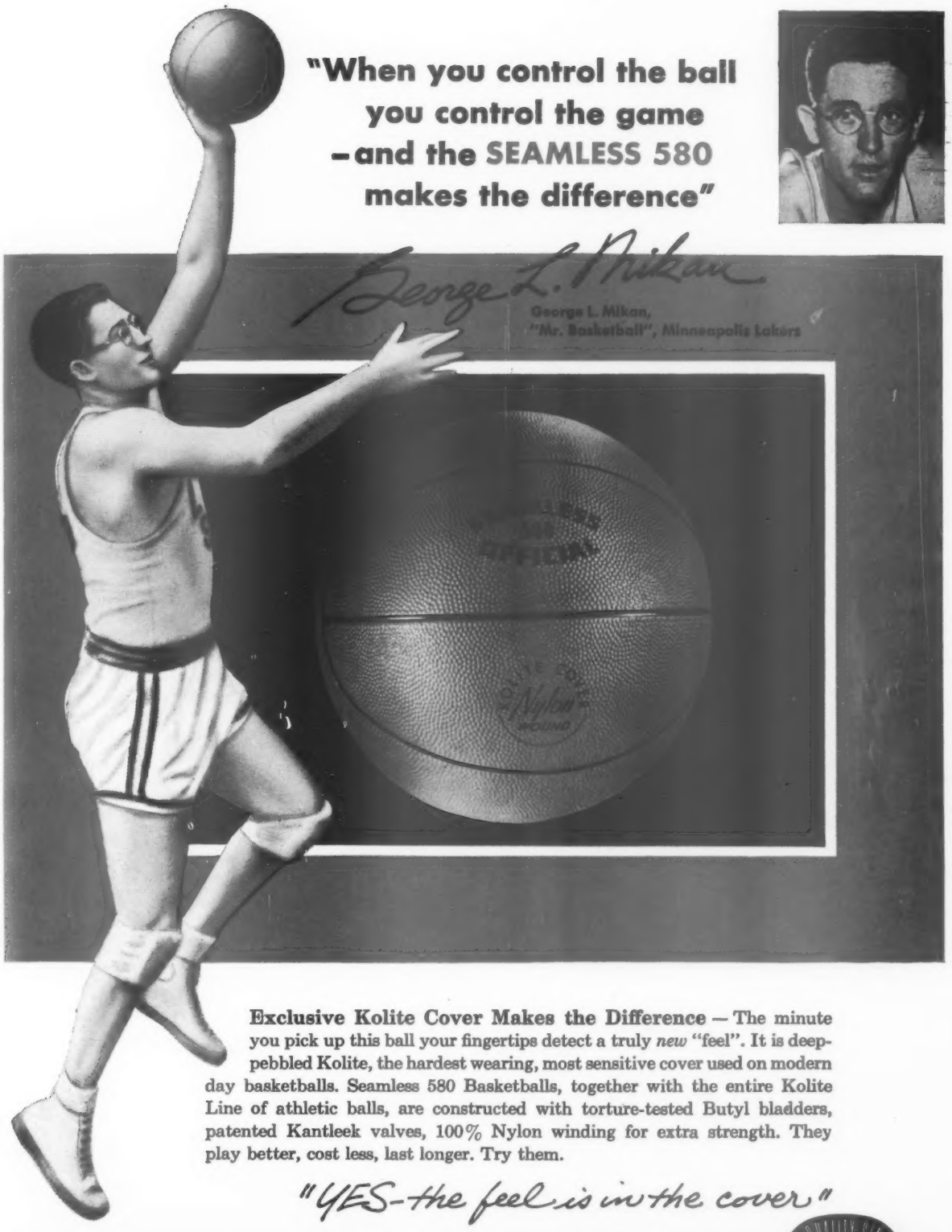

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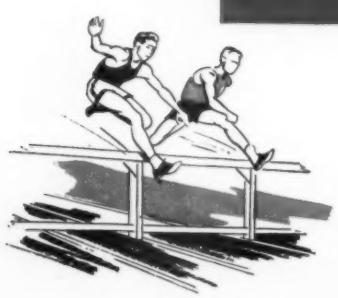
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